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FACILITIES IN THE UNITED STATES FOR THE SPECIAL CARE OF CHILDREN WITH RHEUMATIC HEART DISEASE¹

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During the past several years there has been an awakening of interest in rheumatic heart disease, which is now becoming widely recognized as one of the major public health problems confronting this country. It is, therefore, desirable to determine what facilities for treatment are available, their adequacy, and the need and direction for expansion.

At the outset it should be emphasized that institutional care represents a compromise solution. It is not, and probably never will be, the ideal form of treatment. Barring the discovery of a chemotherapeutic substance capable of inactivating rheumatic infection, or the discovery of a satisfactory method of immunization, treatment will perforce be dependent in a large measure on prolonged rest in bed, the results of which are admittedly often disappointing. Often rheumatic infection runs a fulminating course, severe and irreparable damage developing in a short time. Nevertheless, since the considered care of the child with rheumatic heart disease or potential rheumatic heart disease forms the keystone of efforts to prevent or ameliorate serious heart damage, it seems desirable to find out how this may better be accomplished, frankly recognizing the inherent limitations.

SPECIAL INSTITUTIONS IN THE UNITED STATES FOR THE TREATMENT OF RHEUMATIC HEART DISEASE

According to Swift² there are less than a thousand beds devoted exclusively to the care of rheumatic heart disease patients in the United States. Of these, about 300 beds are located in institutions in Greater New York (1). Owing to the exigencies of war, it has not been possible to ascertain the number of beds devoted to this purpose in Great Britain. London alone had approximately 900 beds set aside for prolonged hospital and convalescent care of children with rheumatic heart disease (2). A comprehensive program for the management of rheumatic heart infection in children was begun in

¹ From the Division of Infectious Diseases, National Institute of Health. Submitted for publication in November 1940.

² Swift, Homer F.: Personal communication.

1926 and was apparently beginning to bear fruit at the outbreak of hostilities. The rheumatism control scheme of the London County Council included the establishment of 20 rheumatism supervisory centers which were special clinics for diagnosis and periodic supervision. According to the Annual Report of the Council (3), the incidence of heart disease among London school children declined from 2.0 percent to 0.8 percent during the 10-year period 1926-36. That the decline was as great as indicated should be accepted with reservations. It may have been that, with increased experience, criteria for diagnosing organic cardiac lesions were made more rigid (4, 5).

There were in the United States at the beginning of 1940 one rheumatic heart disease hospital, seven convalescent institutions of various types devoted exclusively to the treatment of children with heart disease, and one organization with a unit furnishing foster home care to children recovering from rheumatic infection. One of the convalescent sanatoriums is adding facilities for the care of essentially hospital cases. Since the beginning of 1940 at least two other rheumatic heart disease sanatoriums have been opened, while beginning in the fall of 1940 a general convalescent institution in Florida was to be devoted entirely to the treatment of rheumatic heart disease.

There are a number of convalescent sanatoriums which furnish care to rheumatic cardiac patients. Although some of them have wards set aside for these patients, in many instances they do not furnish care on a large scale. In most places, additional beds allocated to this purpose would be sufficient.

RHEUMATIC HEART DISEASE HOSPITAL

House of the Good Samaritan, Boston, Mass.—This institution, which has been devoted exclusively to the treatment of rheumatic heart disease since 1921, is the only rheumatic heart disease hospital in the United States.

The House of the Good Samaritan occupies a three-story, brick building valued at \$375,000. It is located in close proximity to the Harvard Medical School. The building is adequate for the number of patients treated but could be greatly expanded before absorbing the potential load. The hospital is divided into small wards of not more than six beds each. Ample facilities are provided for the isolation of patients with colds and other intercurrent diseases, and seriously ill patients.

The medical staff consists of a full-time research director, a research pathologist and several research assistants, a resident physician, four house officers, four visiting physicians, two assistant visiting physicians, and a consulting staff of ten physicians. The nursing staff consists of trained nurses who are assisted by practical nurses.

There are also a number of bacteriologists, technicians, and custodial and clerical personnel. A full-time social service worker is employed and the part-time services of several social workers at the Massachusetts General Hospital are utilized.

The House of the Good Samaritan has a capacity of 80 beds and treats about 175 patients a year. Over 1,800 cases have been treated since 1921. It has an out-patient clinic as part of its treatment and follow-up service. Some former patients are periodically observed at the Massachusetts General Hospital. The success of these follow-up measures is due largely to the social service department which could serve as a model for other institutions.

The House of the Good Samaritan is a private institution controlled by a board of trustees. Its income is derived from private contributions, research grants, and endowments. Its budget is approximately \$100,000, of which approximately \$70,000 is devoted to the care of patients, and about \$30,000 to research. The average cost per capita per diem is \$2.65, exclusive of the amount spent for research.

This institution does not as a rule accept cases during their first attacks; rather it takes subacute cases and furnishes prolonged hospital care, including a certain amount of convalescent care. Cases of rheumatic fever with or without heart disease and cases of active rheumatic heart disease with relatively good prognosis are accepted. Once a patient has been admitted, he may be readmitted regardless of his subsequent condition, with certain restrictions as to age.

Both male and female patients are admitted. Boys are admitted regularly up to 12 years of age. There are four beds available for male patients over 12 years. Girls and women of any age are admitted. Until a few years ago all patients were admitted free. A maximum charge of \$10 a week now is made to patients who can afford to pay. No private patients are accepted. A certain number of patients are sent in from parts of Massachusetts other than Boston. Their expenses are met by local welfare agencies.

The average duration of hospitalization is about 4 months. Patients are accepted from clinics and homes. Prehospitalization in a general hospital is not required. A previous tonsillectomy is not necessary for admission. A good general diet, rich in calcium, proteins, and vitamins is supplied. Cod-liver oil is furnished routinely. During the winter, patients are given increasing doses of ultraviolet rays.

The House of the Good Samaritan has been responsible for more research studies on rheumatic fever than any other place in the country. Because of a splendid follow-up system, it has been able to make valuable contributions to the treatment and prognosis of this disease over a number of years. Since 1932, approximately 40 scientific articles have been published. A wide range of studies have

been conducted in its well-equipped laboratories. One of its most valuable contributions is that it serves as a sort of clearinghouse for information regarding the clinical aspects of this disease. It has also been extremely useful as a training center for young physicians.

CARDIAC CONVALESCENT SANATORIUMS

Saint Francis Sanatorium for Cardiac Children, Mineola, Long Island, N. Y.—Although this institution is at present a convalescent sanatorium, upon completion of its building program it will be a rheumatic heart disease hospital and sanatorium.

This institution was established many years ago as a summer camp for underprivileged children, operated by the Sisters of the Franciscan Order of Mary. Since 1937 it has been used exclusively for the care of children with rheumatic heart disease.

The building, which is valued at \$100,000, is comfortable and attractive, and is located in the suburbs on a 15-acre tract valued at \$100,000. Additions have been made to the original building to provide for space for laboratories. The sicker children are kept on the first floor and those in better condition on the second floor. There is no elevator service, but this is not regarded as a matter of great importance since cardiac insufficiency in children is due primarily to infection rather than to physical exertion.

The sanatorium has a capacity of 50 beds. Over 300 children have been admitted. At the present time, admission is restricted to girls aged 6 to 12 years. Children with potential heart disease and Classes I and II (new classification) (6) rheumatic heart disease are accepted. The average stay is about 7 months. Cases are admitted directly from homes and clinics, as well as from hospitals. Acute cases are not accepted, but cases developing moderate rheumatic activity are retained. Very sick children occasionally have to be sent back to hospitals in the metropolitan area.

Ten beds are devoted to isolation purposes. On admission, each patient is isolated for 7 days. Acute communicable diseases have not, however, been an important problem. Tonsillectomy is not required before admission.

The New York City Board of Education supplies two teachers. Practically all of the children continue their school work without falling behind. Occupational therapy is carried on by the Sisters.

One of the most noticeable features of this sanatorium is that it is almost devoid of an institutional atmosphere; patients appear to be enjoying life under pleasant surroundings. The rooms do not look like wards. During the winter months, indoor games and storytelling are provided; in summer, the children spend most of their time out of doors, in bed, or on the playground. Motion pictures are shown once a week.

The sanatorium receives \$1.40 per day for each child from New York City. This sum, together with gifts from private sources, is sufficient with careful management to meet expenses, since many of the vegetables and fruits used are raised on the premises, and nursing care is provided by the Sisters. It is estimated that the total cost per patient per diem is about \$2.65.

Follow-up relations are maintained with former patients admitted from Kings County Hospital in Brooklyn. Home visits are made by social workers every 6 weeks as long as is indicated. By alternating the visits of social workers with attendance on clinics, former patients are seen every 3 weeks. It is not considered feasible to follow patients admitted from Manhattan.

The full-time staff consists of one resident physician. There are four visiting physicians and one visiting dentist. The staff is adequate for general convalescent care but does not provide for an extension of research. Ten of the Sisters are graduate nurses and seven are practical nurses. Three have had graduate work in bacteriology at Columbia University. There is one volunteer social worker.

Three single-story, brick pavilions are under construction, each to have a bed capacity of 25. This will enable the institution to care for boys, older girls, and cases of acute rheumatic disease. Saint Francis Sanatorium for Cardiac Children is destined to become one of the largest institutions of this kind in the United States. It will be the only "all-purpose" institution. Persons interested in establishing treatment centers for rheumatic heart disease should personally observe the work that is being done at this sanatorium.

Irvington House, Irvington-on-Hudson, N. Y.—This institution was established in 1920. The present building, opened in 1932, has a capacity of 150 beds but owing to financial stringencies not more than 105 are occupied.

Irvington House is located on a knoll about 500 feet high on the east bank of the Hudson River about 20 miles north of the center of New York City. The building is of modified Georgian colonial architecture, four stories high, in the shape of a letter H, and is adequate for use either as a convalescent institution or as a hospital. In addition to the wards, it contains ample laboratory facilities, quarters, a recreation room, dining room, and service rooms. The land is valued at \$100,000, the building and equipment at \$650,000.

Five wards of 24 beds each are in use; 3 of these are divided into cubicles. In addition there are 19 beds in rooms devoted to isolation purposes. This has proved adequate. Newcomers and patients with upper respiratory infections and other communicable diseases are routinely isolated.

Irvington House is a private institution under a board of directors. Its income for 1938 was \$117,000, of which approximately \$45,000 was

from private contributions, and \$58,000 from the city of New York and Westchester County for the care of patients at a per capita per diem rate of \$1.40. The institution also received a grant of over \$7,000 for research, and small sums from a modest endowment and other sources. Disbursements amounted to approximately \$115,000, of which \$21,000 was for physical maintenance, \$46,000 for institutional administration, \$22,000 for the New York office, \$4,000 for vocational guidance, \$7,500 for research, and \$1,000 for dental equipment. The per capita per diem cost was \$2.00 in 1937, exclusive of research, vocational guidance, and after-care, but including plant upkeep.

The medical personnel consists of two full-time physicians who supervise treatment and conduct research, two visiting physicians, and two consultants. There is one visiting dentist. The nursing staff consists of 12 trained nurses. Twelve recreational teachers are provided. Four teachers are assigned by New York City.

Children of both sexes 7 to 15 years of age are accepted. Admissions are limited to patients who have had rheumatic fever or chorea, and who offer reasonably good prognoses. Cases with a limited degree of rheumatic heart disease are accepted. Applications are made through the New York Heart Association by the chief of a recognized heart clinic. Prehospitalization is not required since patients are isolated for about a week on admission. Tonsillectomy is not required. No private cases are accepted and all treatment is free of charge.

At the present time, each patient is treated there for at least 2 years; some, however, are permitted to go home during the summer. No cases are admitted from December 1 to May 1, in order to prevent the admission of cases of active rheumatic infection.

Numerous research studies are conducted on the etiology of rheumatic fever, heart sounds, methodology of treatment, and the cause of recurrences. The laboratory is well equipped. As part of its research program, the Irvington House maintains a clinic in New York City and examines former patients once a year. Treatment of former patients is done by the referring clinic. This extensive follow-up service requires three full-time social workers.

Adequate recreational facilities, including motion pictures once a week, are provided. With clinical improvement, patients are allowed greater physical activity. A very interesting system of self-government, based on the Seton Thompson system, has been worked out. Patients wear uniforms and receive merit badges for good behavior and physical improvement. This does much to maintain morale and to instill principles of social responsibility.

Despite its splendid physical equipment, it is doubtful whether Irvington House will serve as a model for other convalescent sanatoriums. The cost of the building is approximately \$4,000 per bed,

based on a capacity of 150 beds. One of its chief drawbacks is its relative inaccessibility, which makes it difficult for parents to visit their children. This prevents its use as a hospital for acutely ill patients. Irvington House, however, is one of the best institutions of this kind in the United States and should be studied, not with a view of duplicating it, but of obtaining many helpful suggestions.

Pelham House, Pelham Manor, N. Y.—Pelham House, established in 1914, is the oldest cardiac convalescent institution in the United States. It is owned by the Pelham Heart Association, a private organization, which raises funds for its support; no municipal or State aid is received. It is located near Bronxville, N. Y., about 15 miles from the Columbia-Presbyterian Medical Center with which it is affiliated. The building, which was originally a dwelling house, is of frame construction. Recently a schoolroom and a sun porch have been added. The estimated value of the building is about \$35,000.

Girls aged 5 to 12 years are admitted. Patients are accepted with a greater degree of cardiac damage than is the case in most convalescent institutions. A general policy is made of filling the institution to capacity in the fall and not discharging patients during the winter. Most of the cases are admitted from and followed by the clinics of the Presbyterian Hospital. Some have been observed for as long as 15 years.

The medical personnel consists of three attending physicians; the nursing staff of two trained nurses. A teacher, who also serves as recreational supervisor, is furnished by New York City.

Pelham House is run on a very economical basis. Care is adequate but plain. The per capita per diem cost is slightly over \$1. It has a capacity of 30 beds, and serves as a model of what may be accomplished on a modest scale.

Although not equipped for research on an extensive scale, throat cultures and blood specimens are obtained and sent to the Presbyterian Hospital for study. Investigations are also being conducted on the influence of sulfanilamide in preventing recurrences of activity of rheumatic infection (7).

Martine Farm, White Plains, N. Y.—This institution was established in 1921, and consists of a large farm house on a tract of 45 acres. It has a capacity of 25 beds. It is financed largely by private philanthropy with some State and municipal assistance. Since much of the food is raised on the farm, it is impossible to determine the per diem cost of maintaining patients.

Boys and girls aged 6 to 16 are treated. The average stay is about 6 months. Children are accepted from a number of clinics and hospitals. Prehospitalization is not required. Efforts are made to limit admission to patients with relatively good prognosis, with a functional capacity of Classes I and II.

The medical staff consists of one visiting physician from New York City and a local physician who attends emergency calls. There are five trained nurses and two practical nurses at the farm, and two trained nurses engaged in follow-up work. Two teachers are supplied by New York City.

There is no research program other than follow-up studies, and there are no laboratory facilities. From the point of view of actual care of patients, Martine Farm probably does as good work as many institutions with more pretentious programs. The children seemed happy and more robust than in any of the other institutions studied.

Children's Heart Hospital, Philadelphia, Pa.—The name of this institution is misleading, since it is actually a convalescent sanatorium.

Children's Heart Hospital was founded in 1916, and moved to its present location in 1927. The principal buildings consist of a modern fireproof sanatorium and a nurses' home, located on a 14-acre tract. The sanatorium contains 2 wards with a total of 60 beds, 2 isolation rooms of 2 beds each, enclosed sun porches which are used for school-rooms, and service rooms. The nurses' home contains the heating plant and a small laboratory. The total value of buildings and ground is \$275,000. Despite its recent construction, the sanatorium building has several objectionable features. The wards are almost square in shape and contain 4 rows of beds. This makes isolation nearly impossible and there are only 4 other beds devoted to that purpose. The toilets are inconveniently located. There are no dining-room facilities so that even ambulatory patients must eat their meals in bed.

The hospital is privately owned and is operated under the auspices of the Philadelphia Heart Association. The annual budget amounts to approximately \$34,000, of which \$8,000 is received from the State, \$1,500 from a trust fund, \$9,000 from the families of patients, and the remainder from private contributions. The per diem cost is \$1.65 per patient. Unlike most cardiac convalescent institutions, expenses are partly defrayed by a charge of \$3 a week which is met either by the children's parents or referring social agencies. There are a few free beds and some patients are admitted at \$1.50 a week. A few out-of-town patients are accepted at somewhat higher rates.

Children's Heart Hospital furnishes care to white and colored girls aged 3 to 13 years, white boys aged 3 to 12 years, and colored boys aged 3 to 11 years. Efforts are made to limit initial admissions to patients with early rheumatic heart disease with small hearts, good functional capacity, and without histories of congestive failure, or to patients who have had rheumatic fever but do not have definite organic cardiac involvement. Cases recovering from simple chorea are not as a rule admitted. Most patients are examined by a member of the staff prior to admission.

Because of lack of isolation facilities, a 2-week stay in a general

hospital is required before admission. This plan, while not the method of choice, has worked rather successfully. The objections are that it exposes a child to communicable diseases on the wards of a general hospital and entails an undesirable expense. A tonsillectomy is no longer required except when indicated. Patients who become acutely ill are sent back to the referring hospitals.

Nearly 1,200 patients have been treated since 1922. The present capacity is about 90 per year. The average duration of treatment is about 6 months. Home conditions are investigated by a social worker. Efforts are made to see that former patients continue treatment in a clinic or under the care of their family physician.

The medical staff consists of a physician-in-chief and eight attending physicians who serve for periods of 3 months each. There are seven medical consultants and one dental consultant. There is also a woman resident who is either a graduate student or a fourth-year medical student. The nursing staff consists of a chief nurse and an assistant, both of whom are graduate nurses, and ten practical nurses.

Children's Heart Hospital is used by the University of Pennsylvania for both undergraduate and graduate instruction. Research is limited to follow-up surveys, studies of familial incidence, and the influence of tonsillectomy, with subsequent removal of hyperplastic pharyngeal tissue, on the source of rheumatic infection.

Lymanhurst Cardiac Convalescent Home, Minneapolis, Minn.—Unlike other institutions, this sanatorium has an official connection and is under the joint control of the city health department and the school system. It was organized in 1935, and occupies the second floor of the Lymanhurst Health Center.

The building is about 20 years old. The value of the plant, which is not used entirely as a cardiac sanatorium, is estimated at \$280,000. The sanatorium proper consists of two large wards having a total capacity of 40 patients, with additional isolation facilities and laboratories. The grounds cover the greater part of a city block.

Care is devoted mainly to children of school age less than 16 years old. Admission is generally limited to cases with Class I and Class II functional capacity and potential heart disease. Treatment is rendered free of charge. Patients are admitted from hospitals and clinics, on advice of private physicians, and from the school clinics to which the director is consultant cardiologist. Prehospitalization or previous tonsillectomies are not required.

The Lymanhurst Cardiac Convalescent Home is fortunate in having an official connection. As a result, it is able to maintain a follow-up clinic under the auspices of the school department. This clinic does not attempt to treat these cases but observes them periodically.

The medical staff consists of a director and a consultant otolaryngologist. The nursing staff, teachers, and most of the other employees

are employed by the Work Projects Administration. Consequently, owing to restrictions in the number of hours per week, neither the number of personnel nor the per diem cost is comparable to similar institutions.

La Rabida Jackson Park Sanatorium, Chicago, Ill.—This institution has been devoted to the treatment of heart disease since 1922. The present building, located in a public park, was erected in 1932. It is of brick construction, 2 stories high, and has a capacity of 100 beds. Its normal operating capacity is about 60 beds. Funds have not permitted a greater number. The plant and equipment are valued at \$250,000. It is financed entirely by private donations, its budget amounting to about \$25,000 a year. It is managed economically at a cost of less than \$1.30 per patient-day.

For the most part, admissions are restricted to potential heart disease and Classes I and II rheumatic cardiac subjects. Classes III and IV cases are not desired but are occasionally accepted. Patients are admitted from cardiac clinics, homes, and general hospitals. Prehospitalization is not required. Cases, on admission, are isolated for a period of 1 week. Tonsillectomy is not required. The average duration of treatment is about 6 months.

Since 1922, 844 patients have received convalescent care. In 1938, 127 patients were treated. The explanation for the small number since 1922 is that only 30 beds were occupied during the depression.

La Rabida Jackson Park Sanatorium does not have a cardiac clinic of its own for after-care, nor does it have any social workers. Visiting nurses visit former patients every week for 6 weeks after discharge, then once a month for a year, and after that, every 6 months for several years. These visiting nurses make reports on the condition of former patients and ascertain that they attend clinics.

The medical staff consists of five attending physicians. There are also a dentist and an undergraduate interne. The nursing staff consists of two trained nurses and ten practical nurses. The Board of Education supplies three teachers who furnish bedside instruction.

NEWER SANATORIUMS

In addition to these well-established institutions devoted entirely to the treatment of heart disease in children, several others have been recently opened or will be opened in the near future. Since their operation as cardiac convalescent sanatoriums has not had the test of time, they will be described in considerably less detail.

Victoria Foundation, Inc., Morris Plains, N. J.—This institution, housed on a country estate about 10 miles from Morristown, N. J., was opened on June 1, 1940. It is planned to operate it on a modest

scale, providing care for about 20 rheumatic cardiac children from northern New Jersey.

Heart House, Pittsburgh, Pa.—This cardiac sanatorium, devoted to the care of children under 13 years of age with potential or moderately advanced rheumatic heart disease, was opened in June 1940. The building has a capacity of 50 beds, but owing to budgetary restrictions only 25 children will be cared for at present.

National Children's Cardiac Home, Miami, Fla.—Although this institution has been in existence for a number of years as a general convalescent sanatorium and has treated some rheumatic cardiac patients, its name has been recently changed and in the future it is planned to treat rheumatic cardiac patients only. Patients will be sent there from large northern cities, especially New York. A number will be admitted free of charge, while others will pay up to \$10 a week. Parents are given to understand that children will not be accepted for less than a 2-year period. To avoid their becoming a charge upon local welfare agencies, parents of free-bed cases are not permitted to accompany their children to Florida. This convalescent institution should be in a position to furnish a practical test of the possible benefits of prolonged residence of rheumatic patients, under sanatorium care, in a subtropical climate.

GENERAL CONVALESCENT INSTITUTIONS FURNISHING CONVALESCENT CARE TO RHEUMATIC CARDIAC PATIENTS

For economic reasons it is doubtful whether special rheumatic heart disease sanatoriums are warranted in areas with less than a quarter of a million population. In any attempt to deal with this problem, a survey should be made of existing institutions to determine to what extent they may be utilized. Most general convalescent institutions treat some rheumatic cardiac patients; in many places it is desirable to increase the number of beds available for this purpose.

The description of institutions devoted in part to the care of these patients will be in somewhat less detail than that of the larger institutions devoted exclusively to this purpose. This should not be regarded as a reflection on the type of work they are doing. Treatment is comparable in many instances to that obtained in rheumatic cardiac sanatoriums.

New Haven Community Center, Hamden, Conn.—This institution, housed in brick buildings, has a capacity of 90 beds, of which about 20 are devoted to children with heart disease. New cases are isolated for 1 week. All cardiac cases are treated for at least 6 months; some as long as 2 years. The cost of maintaining a patient is about \$2.50 a day. Parents bear little of this expense as most patients are from families on relief. In addition to treatment furnished at this insti-

tution, foster home care is provided to a limited extent. The cost of foster home care is about \$2 a day.

Ridge Farm Sanatorium, St. Louis, Mo.—This sanatorium was established in 1913 for the general convalescent care of patients from the Children's Hospital. It has a capacity of 60 beds, about 20 of which are devoted to cardiac patients. Most of the patients have potential rheumatic heart disease or Class I or II rheumatic heart disease; a few severe cases are accepted. The average duration of treatment is about 6 months. Because of its affiliation with the Children's Hospital, all patients are admitted from that institution and their clinical records are sent with them to Ridge Farm. This eliminates duplication of records and reduces laboratory studies. Efforts are made to examine the siblings of patients.

In addition to institutional convalescent care, a number of patients are being furnished foster home care. The medical director of Ridge Farm favors this type of care because it is cheaper, more easily organized, and he believes that there is less danger of reactivation of rheumatic infection, especially on return home. The monthly cost of maintaining a patient at Ridge Farm is \$75 to \$80 as contrasted with \$25 to \$30 in foster homes.

Children's Convalescent Hospital, Rochester, N. Y.—This general convalescent institution is located on Lake Ontario about 10 miles from the center of Rochester. It is of brick construction, two stories high, and is valued at \$161,000. It has a capacity of about 50 beds, of which 20 are devoted to cardiac patients. With the addition of a new wing, the number of cardiac cases admitted will be almost doubled. About 70 cases are treated each year. The average stay is about 3½ months. Cost per patient-day is about \$2.15. Most patients are admitted free of charge, the hospital receiving its funds from the Community Chest.

Milwaukee Children's Convalescent Hospital, Milwaukee, Wis.—This institution has a capacity of 50 beds and occupies a well-constructed building located in the country. It is under the control of the Milwaukee Children's Hospital. Its chief source of support is the Community Fund. Very little assistance is received from patients' families. The per diem cost is about \$3 per patient. The average duration of convalescent care for all types of patients is 78 days.

Theresa Grotta Home for Convalescents, Caldwell, N. J.—This institution has one building of 18 beds set aside for the care of children with potential and moderately advanced rheumatic heart disease. It is devoted primarily to the treatment of child residents of Newark, N. J., although nonresidents are sometimes accepted. The average duration of treatment is about 14 months. It is a nonprofit, charitable organization and receives most of its funds from the Newark

Community Chest. Although much of the treatment is rendered gratis, an effort is made to adjust the fee according to the financial status of the patient.

Happy Hills Home, Baltimore, Md.—This convalescent sanatorium has facilities for 20 patients. The average stay of children with rheumatic heart disease is between 6 months and a year. The estimated per diem cost per bed patient is \$2.10; for "up-patients," \$1.40. In addition, there is the St. Gabriel Convalescent Home which furnishes convalescent care to white girls. Both of these institutions are affiliated with the Department of Pediatrics of the Johns Hopkins Hospital.

OTHER CONVALESCENT INSTITUTIONS

In addition to these institutions, there are a number of others supplying convalescent care to children with heart disease. At the present time the New York Heart Association is compiling a directory, which will probably be published during the next few months.

Among the other convalescent institutions which furnish care free or at reasonable cost are the Willow Crest Home, Willow Crest, Pa.; Ivy Craft Convalescent Home, care of Jefferson Hospital, Philadelphia, Pa.; Dunwoody Home, Newtown Square, Pa.; Broomall Convalescent Home, Broomall, Pa.; Children's Hospital and Convalescent Home, Wellesley, Mass.; Christ Child Home, Rockville, Md.; Sarah Schermahorne Home, Milford, Conn.; Seashore Home, Atlantic City, N. J.; Children's Hospital of Michigan Convalescent Home, Farmington, Mich.; Loet Home, East View, N. Y.; and Children's Convalescent Home, Westfield, N. J. Owing to increased interest in this problem during the past few years, there are probably many more institutions than are listed here.

In some general convalescent institutions there have been prejudices against receiving rheumatic cardiac patients for fear of sudden death. Experience has shown that such fears are groundless. At the Children's Heart Hospital in Philadelphia, there has not been a sudden death among over 1,000 admissions during a period of 15 years. Other institutions corroborate this experience.

FOSTER HOMES

Foster home care provides an alternative to institutional care. The chief advantage is economy, since practically no initial outlay is required and the per diem cost is less. Foster home care is more flexible, and can be expanded or contracted according to case volume and financial resources. There is probably less danger of cross infection, and the child is maintained in an environment more nearly like that to which he will eventually return. It should be understood, however, that laxly managed foster homes constitute a physical and moral hazard.

There is only one organization in the United States with a unit devoted to furnishing convalescent care in foster homes exclusively to rheumatic cardiac children. Persons having in mind the establishment of similar units would do well to visit it and study its methods.

Speedwell Society, 20 East Forty-second Street, New York City.—The Nassau Cardiac Unit, West Hempstead, Long Island, of the Speedwell Society is devoted exclusively to furnishing prolonged care to 30 children aged 6 to 12 years with rheumatic or potential rheumatic heart disease. Children with these diseases are placed in foster homes within a radius of about a mile. Not more than three children are sent to one home. A visiting nurse makes daily contacts with the patients and a local physician examines them periodically. A special school is maintained in the center of the area. Children who become seriously ill are sent back to hospitals in the city. The duration of this foster care is two winters.

Extreme care is apparently used in selecting these homes, which are investigated both by the Society and the Department of Welfare of the State of New York. The foster family must be self-supporting to the extent that the taking of children is not necessary for its livelihood. Families with children under age 15 are not accepted. Complete physical examinations, including chest X-ray examinations, are required on all members, and all must have a negative Schick test. The dwellings are for the most part single-story bungalows. A toilet on the ground floor is required for two-story buildings.

The Speedwell Society receives about half of its funds from the city of New York and the remainder from contributions and patients' families. Most of these families pay about \$3.50 a week, some \$1 a week, others nothing. The total budget of the cardiac unit for 1939 was \$16,000. The per capita cost per diem was \$1.45. This includes the maintenance of the New York office, board and lodging, salaries of the unit physician, dentist, and nurse, supplementary milk, transportation, insurance, supplies, clothing, and laboratory fees.

COMMENT

Objectives.—Public and private agencies contemplating the establishment of institutions devoted to the care of children with rheumatic heart disease should have a clear idea of their objectives, difficulties likely to be encountered, and financial resources, both for construction and maintenance.

There are four distinct types of cases. The first two are more or less similar, while the third and fourth present problems of a somewhat different nature:

Type I. Potential rheumatic heart disease.—Here the problem of diagnosis is outstanding. If care is not exercised in the selection of these cases, the institution,

even though it serves a useful purpose, is likely to deteriorate into a preventorium and not serve the purpose for which it was primarily designed.

Type II. Early or moderately advanced inactive or slightly active rheumatic heart disease.—Since it is not practicable to institutionalize every child with a quiescent rheumatic lesion, it is necessary to select children with evidence of rheumatic activity or those who have recently had rheumatic activity. Certain cases should be admitted in an inactive state with the hope of building up the general condition to ward off attacks.

Type III. Cases with moderate to severe rheumatic activity.—These cases should not be treated at a convalescent institution unless it is staffed and equipped to handle patients requiring absolute rest in bed. Otherwise, these should be retained in a general hospital.

Type IV. Cases requiring domiciliary care.—This is the type of case with a greatly enlarged heart which hovers on the brink of cardiac insufficiency for months or even years and usually succumbs. In many instances it is perhaps well to permit the patient to return home and obtain what little pleasure life affords with his relatives, readmitting him to a general or children's hospital when occasion demands. Dictates of humanity often require that these patients be cared for in an institution. To place him on the wards of a general or children's hospital is expensive from the point of view of per diem cost and the use of a bed commonly devoted to the treatment of acute conditions. Hospitals have often discriminated against the "cripple who does not limp" by establishing arbitrary rules about the maximum period of hospitalization. This problem, although difficult, can be solved by the exercise of a spirit of charity by all concerned. Either the special institutions should be equipped to handle these cases or the general hospital should modify these restrictions. In the larger cities these cases could be treated more economically on chronic disease wards or in chronic disease hospitals.

Convalescent versus "all-purpose" hospitals.—Except in the larger cities in the northern part of the country, the greatest need is for convalescent institutions furnishing prolonged care for children of the first and second types. Other cases should be treated in general hospitals.

In the larger cities in the North, "all-purpose" rheumatic heart disease hospitals would probably be more efficient and economical. These institutions need not be housed under one roof. Initial attacks would be treated in a general hospital and admitted to the cardiac sanatorium as soon as they have sufficiently subsided. Cases of the third and fourth classes would be treated in an infirmary or even a special ward of a general hospital. Type I and Type II cases would be treated in wards devoted essentially to convalescent care, or foster home service could be provided. Should these cases develop signs of severe rheumatic activity, they would be hospitalized in the special ward or infirmary. The strictly convalescent features could be located in the suburbs or even in the country, with the ward or infirmary in the city. Such a plan would operate to an economic advantage as it costs less to treat rheumatic children in special wards than in general wards.

Location of institutions.—Most special institutions have been established in buildings previously devoted to the treatment of other diseases, or in buildings, usually dwellings, donated to them. Because of their inaccessibility, some institutions have had difficulty in obtaining the services of physicians. If its location is too distant or inconvenient to visitors, parents will not permit the admission of their children. Difficulty may also be encountered in obtaining nurses, other employees, and supplies. Proximity to referring hospitals must also be considered, as sometimes patients have to be sent back. Since the city school department is expected to furnish teachers, the institution should be located with that in mind.

Type of construction.—It is expected that for the most part existing buildings will be utilized at least in the beginning. Most of the special institutions will probably start with less than 50 beds, often less than 30. Provided it can be operated economically, the type of building is not in itself important. The treatment of rheumatic heart disease requires little special equipment. The prime considerations are the comforts of patients and personnel, and ample isolation facilities. Overcrowding should be scrupulously avoided.

In the opinion of the writer, patients should be isolated in cubicles. The arguments raised against it are that it produces an "institutional effect" and that patients mingle so much at meals and at school that it is an unnecessary refinement. The "institutional effect" can be overcome by maintaining morale in other ways. Although it is admitted that under normal circumstances these patients often come in close contact with each other, cubicles serve to isolate the child who is slightly to moderately ill.

Where new construction is contemplated, the same general rules obtain. Wards of not more than 20 beds each, with sufficient space for a kitchen, dining room, and recreation room which may also be used for teaching purposes, physicians' and nurses' offices, laboratory, service rooms, and quarters for personnel, should be provided. For the institution of less than 30 beds, single-story construction is probably better. In the larger institutions, the sicker children can be kept on the ground floors and ambulatory patients on upper floors, provided elevator service is available. Separate wards should be provided for girls and boys. Buildings should be fireproof.

Isolation facilities.—The need for sufficient isolation facilities cannot be too greatly emphasized. In addition to cubicles, an "overhead" of at least 20 percent of the beds on the wards should be provided in small rooms, not more than two beds to a room, and the beds should be separated by partitions.

Grounds.—Since most of the children are ambulatory, sufficient ground, level and partially shaded, should be provided for supervised recreation.

Equipment.—For a small institution devoted primarily to convalescent care, the equipment need not be elaborate. Neither an electrocardiograph nor X-ray equipment is necessary. If a choice must be made between purchasing one or the other of these pieces of equipment, X-ray equipment, particularly a fluoroscope with orthodiagraphic attachment, is likely to be of greater value. The writer has not been impressed with the practical application of electrocardiography to cardiac problems in childhood. The clinical laboratory may be limited only to facilities for routine blood counts, urinalyses, and erythrocyte sedimentation rates.

For the larger institution, X-ray and electrocardiographic equipment are almost essential for the proper evaluation of certain cases. Even in a large institution, the laboratory equipment need not be elaborate if the institution is devoted exclusively to treatment.

In the larger institutions, elevator service should be provided. In two-story dwellings, the installation of elevator service seems an unnecessary expense. Seriously ill children should be sent back to the referring hospital. Moderately ill children should be kept in bed. Any child unable to climb a flight of stairs should be in bed. In rheumatic heart disease in children, infection and not overexertion is the usual cause of cardiac insufficiency.

Research activities.—Nothing is more erroneous than the current practice of making a fetish over research. The immediate need is for treatment facilities; if there are then sufficient funds and sufficient ideas, a research program may be contemplated.

Clinical records.—The decision as to the type of clinical records is dependent on the kind of patients treated, and the size and training of the professional staff. Every patient should have a complete physical examination on admission and before discharge. Important observations should be recorded by attending physicians. Changes in weight, temperature readings, blood counts and sedimentation rates, X-ray and electrocardiographic findings should be recorded on appropriate forms. It is too much, however, to expect busy physicians serving gratuitously to make weekly progress notes on ambulatory cases, especially when few changes may be detected over a period of months. Should the records be intended for clinical research, they should be more elaborate. The graphic record systems in use at the Irvington House, the House of the Good Samaritan, and Saint Francis Cardiac Home should be studied.

Educational facilities.—Classroom and even bedside instruction, usually to the high school grades, should be provided. Children with average intelligence who are given a few hours' instruction a week individually or in small groups are generally able to resume their school work on discharge without loss of time. Occupational training, however, is probably not feasible in institutions of less than 100 beds.

Even then, it is well to remember that most of these patients are under 12 years of age and their life's work is not a serious consideration either to themselves or their parents, who should be advised concerning the future with a view of preparing their children for work not requiring strenuous exertion.

Psychological background.—It is a mistake to assume that every child with rheumatic heart disease is a psychiatric problem; it is doubtful whether the percentage is any greater than in the general population. On the basis of a number of years of practical experience, the writer has been impressed with the infrequency of behavior problems. Fear has also been expressed concerning the danger of creating an "institutional atmosphere" with deleterious effects on the mind of the growing child. To date none of these viewers-with-alarm have come forward with evidence to indicate that there is necessity for burdening the pay rolls of these institutions with psychiatrists, psychologists, and child-guidance experts.

Tact and kindness will do much to allay the danger of superimposing cardiac neuroses, which otherwise may become the more incapacitating factor. The attitude of the institution should be one of education, not repression. The child should not be constantly impressed with the seriousness of his condition or that he is different from other children. He should be taught how much rather than how little he may do with safety.

A definite program should be provided to include games commensurate with the physical condition, indoor recreation, story telling, motion pictures, religious services, birthday and other parties, and other morale-building activities. Much time should be spent out of doors when the weather and the patients' physical condition permits. Physical activity commensurate with clinical improvement should be encouraged. Standardized "graduated" exercises are not advised since they center too much attention on the heart and may result in a neurosis.

Summer cardiac camps.—These are mentioned only in condemnation. There is less danger of reactivity of rheumatic infection during the summer than any other season. There is no evidence that they have any carry-over value against reactivation of rheumatic infection during the winter and spring months. While rheumatic children, like other children, are entitled to happy vacations, summer camps should not be provided under the guise of therapy.

Duration of treatment.—Ever since cardiac convalescent institutions were first established, there has been a constant tendency to increase the length of stay. This has increased from an average of less than a month to about 6 months. The average is shortened because some patients are discharged against advice or sent back to referring institutions. Some students of this problem are advocating

the retention of these patients in special institutions or foster homes for a period of at least 2 years, with perhaps a furlough home during the summer months.

A child recovering from an attack of rheumatic fever during the spring may require only a relatively short period of convalescent care, perhaps about 3 months. On the other hand, a child who develops the disease in the fall or winter months will probably require at least 6 to 9 months of rest. Much depends upon the economic status of the family. Children coming from good home environment may be discharged much sooner. The case requiring the longest duration of treatment is the one which requires domiciliary care. This may require a 2- or 3-year stay in a special institution, especially if home conditions are unfavorable.

It seems evident that any institution should plan to furnish treatment for an average of about 1 year. Many cases will require less than that, while others will require more. In any event, there should not be a fixed upper limit to the duration of treatment which may be prolonged almost indefinitely by activity of rheumatic infection.

Physical examinations of other members of patients' families.—Since additional cases of rheumatic heart disease, rheumatic fever, or chorea occur in about 40 percent of these families, it is highly desirable that other members, especially siblings, be examined either at the special institutions or by the cardiac clinics of referring institutions according to a prearranged plan.

Cardiac clinics in conjunction with special institutions.—Except in infrequent instances in which a special institution is located near the center of a large city, like the House of the Good Samaritan in Boston, treatment of discharged patients should devolve upon referring institutions. This prevents duplication of effort, and encourages clinic attendance in the home vicinity of the patient. Special institutions with research programs could pattern after Irvington House and establish a purely diagnostic follow-up clinic which the patient attends once or twice a year.

Medical personnel.—Very few institutions will be able to pay attending physicians. These should be practicing cardiologists and pediatricians interested in the problem. To provide variation and to prevent the work from becoming a burden, rotating services of not more than 4 months should be provided. Admissions are facilitated by selecting visiting physicians from a number of hospitals.

In nearly every city large enough to warrant the establishment of a special institution, it is possible to induce specialists to serve gratuitously as consultants. With the possible exception of the otolaryngological consultant, few demands are made on their time. In addition, an ophthalmologist, a dermatologist, a roentgenologist (or at least a physician versed in this subject), and a laboratory man are usually

required. A consultant cardiologist and pediatrician are often desirable. Larger institutions may require a psychiatrist and an orthopedist.

Within certain limits the necessity for a resident physician depends upon the type of patients treated. Even a relatively small institution treating seriously ill patients may require the services of a resident physician who may also be engaged in research work. It is doubtful if most institutions with a bed capacity of less than 80 will require the services of a resident physician, provided the visiting staff may be obtained without delay.

A number of institutions furnish board and room to fourth-year medical students who are responsible for routine histories and physical examinations, progress notes, and laboratory work, especially at night. The histories and physical examinations should be checked by practicing physicians and should not be used for research.

Dentists.—The services of a dentist are required for the prevention of foci of infection, for assistance in proper mastication, and for the treatment of dental emergencies. An institution of 30 beds would probably require a dentist about 4 hours a week, larger institutions for proportionate periods.

Research staff.—Here the sky is the limit. As has been previously indicated, the present need is for treatment rather than research centers. Institutions large enough to have resident physicians probably will engage in certain research activities. The nature of the research will determine the requirements for a research staff. For accounting purposes, funds devoted to research should be considered on a different basis from ordinary operating expenses.

Trained nurses.—As in other hospitals, a well-trained, sympathetic, tactful, but firm, chief nurse is a requisite. The number of nurses is dependent largely on the type of patients. Every institution, regardless of size, needs at least two trained nurses. If only convalescent care is furnished and patients requiring bed care for more than a few days are returned to the referring hospital, about one trained nurse for each 20 patients will suffice. Where seriously ill patients are retained, the number of trained nurses will have to be increased. This is not altogether an added expense, since the number of practical nurses can thereby be decreased.

Practical nurses.—These may be employed in convalescent institutions filled largely with ambulatory cases. Here the problem is largely supervision and household care rather than nursing. Approximately one practical nurse for every ten patients is required. Children sick enough to require absolute bed rest should be under the supervision of a trained nurse.

Dietitians.—Except in institutions of more than 100 beds, the

services of a full-time dietitian will not be required. The chief nurse or an assistant can assume this duty.

Social workers.—A social service department is almost a necessity for the proper functioning of any cardiac convalescent institution of more than 30 beds. It should be responsible for establishing friendly relations with parents prior to the child's admission, for obtaining first-hand information about the social status, financial condition, and environment of the family, and seeing that discharged patients obtain proper medical supervision. This department may also assist in follow-up studies. The trained social worker can also facilitate transfer of patients from general hospitals to convalescent institutions, and, in event of emergency, facilitate their return to referring institutions.

Other personnel.—The necessity for other personnel, both inside the institution and on the grounds, is dependent on so many factors, such as location, climate, construction of buildings, size of grounds, and bed capacity, that it is not possible to discuss this aspect in detail.

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SIPHONAPTERA: THE GENERA *AMPHALIUS* AND *CTENOPHYLLUS* IN NORTH AMERICA¹

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Two genera of fleas, *Amphalius* and *Ctenophyllus*, are characteristic parasites of pikas, *Ochotona* spp., the smallest members of the order Lagomorpha. In the Palearctic region both these genera of fleas are represented by several species but in North America there appears to be but a single species of each insofar as can be judged by material at hand and published records. These are closely related to Asiatic forms.

¹ From the Rocky Mountain Laboratory, Hamilton, Mont., Division of Infectious Diseases, National Institute of Health.

In this paper the North American species are redescribed, figured, and all available distributional data given. At least one species should be found wherever pikas occur on this continent, yet both species remain rare in collections. The writer has been fortunate to secure through loans from 5 museums the material herein recorded, representing 16 field collections.

Amphalius Jordan 1933

Genotype: *Ceratophyllus runatus* Jordan and Rothschild, 1923.

1933. *Amphalius* Jordan. *Novitates Zoologicae*, 39: 74.

Amphalius necopinus (Jordan)

1925. *Ceratophyllus necopinus* Jordan. *Novitates Zoologicae*, 32: 110, text figure 37.

1933. *Amphalius necopinus* (Jordan). Jordan: *Novitates Zoologicae*, 39: 74.

Originally described from a pair taken from "*Ochotona muiri*" = *Ochotona schisticeps muiri* in Mono County, Calif.

Head of male figured. Antennal groove not continuous across dorsum of head. Frontal tubercle prominent, acute. Eye well pigmented. Preantennal row of 5 bristles. Ocular row of 3, the uppermost on a level of the eye and not close to the antennal groove. A few other fine bristles on the gena with a row of 6 fine ones between the medium and ventral bristles of the ocular row. Gena acute. Bristles on second segment of antenna equaling or exceeding the club of the antenna. Club distinctly segmented. Two bristles on occiput above middle of antennal groove. Antennal groove bordered dorsally with fine setae. About 8 bristles on each side of posterior margin of the head. Labial palpi 5 segmented, not quite equaling anterior coxae.

Thorax and appendages.—Pronotum with an anterior row of 14 large bristles and a ctenidium of 28 spines. Long thin bristles on inside of hind coxae from base to apex. Outside of forefemur with minute bristles. Fifth segment of all tarsi with 5 lateral bristles.

Abdomen.—The apical spinelets are in groups on each side of tergites 1 to 4 and number 2, 3, 3, and 3, respectively.

Modified segments.—Male. The eighth sternite is figured. It bears a pair of subterminal ventral bristles, a terminal sclerified area and a sharp dorsal projection. The large dorsal membranous plume on this sternite is not figured, as its details are obscured by other sclerites in all preparations available. Sternite 9 is figured. The semi-circular proximal lobe, curved spine, and ventral hook are very characteristic for members of this genus. The long blade projecting beyond the distal lobe as figured may not be a part of the ninth sternite. Its basal connections are not distinct. In a few specimens available from British Columbia this blade is much wider. The

claspers are figured. The immovable process is long and narrow. The long, posterior ventral arm on the movable process of the clasper distinguishes this from all other North American fleas. Dr. Jordan's figure (1925) of this character is incomplete or from a damaged specimen. The long process and dilated apex resemble the head and neck of a bird.

Female: The seventh sternite is figured. The posterior margin bears 2 distinct lobes, the upper, long, wide and truncated, the lower, short and rounded. The bristles on each side of this sternite are divided into an upper group of 6 and a ventral group of 3. The receptaculum seminis is U-shaped with no marked division into head and tail, though the head is slightly wider and more sclerified. The style is figured and is about twice as long as it is wide. There is an unusually large number of lateral and subterminal bristles, 12 or more, on the style in this species.

Asiatic representatives of this genus are *A. runatus* (Jordan and Rothschild) 1923, and *A. clarus* (Jordan and Rothschild) 1922.

Previous records:

Jordan (1925). Host, "*Ochotona muiri*" = *Ochotona schisticeps muiri*, Pine City, Mono County, Calif., July 1922. 1 male, 1 female (types).

New records: (See distribution map.)

From the collection of G. P. Holland, Livestock Insect Laboratory, Kamloops, British Columbia.

1. Host, *Ochotona princeps cuppes*, Reno Mountain, Salmon, British Columbia, 1 male, collected by T. K. Moilliet.
2. Host, *Ochotona princeps*, Banff, Alberta, July 14, 1939, 2 males, 1 female, collected by J. D. Gregson.

In the collection of the Rocky Mountain Laboratory, Hamilton, Mont.

3. Host, *Ochotona* sp., Boulder County, Colo., June 15, 1939. 7 males, collected by Dr. Gordon E. Davis.
4. Host, *Ochotona* sp., Rocky Mountain National Park, Colo., June 11, 1940. 3 males, 1 female, collected by R. H. Baker.

Ctenophyllus Wagner 1927

Genotype: *Ceratophyllus armatus* Wagner 1900.

1927. *Ctenophyllus* Wagner. Konowia, 6: 108-112.

Ctenophyllus terribilis (Rothschild)

1903. *Ceratophyllus terribilis* Rothschild. Novitates Zoologicae, 10: 317-318, plate 9, figures 1-3.
1905. *Ceratophyllus terribilis* Rothschild. Baker: Proceedings United States National Museum, 29: 134, 151.
1933. *Ctenophyllus terribilis* (Rothschild). Jordan: Novitates Zoologicae, 39: 70-71.
1935. *Ctenophyllus terribilis* (Rothschild). Spencer: Proceedings of the British Columbia Entomological Society for 1935, p. 14.

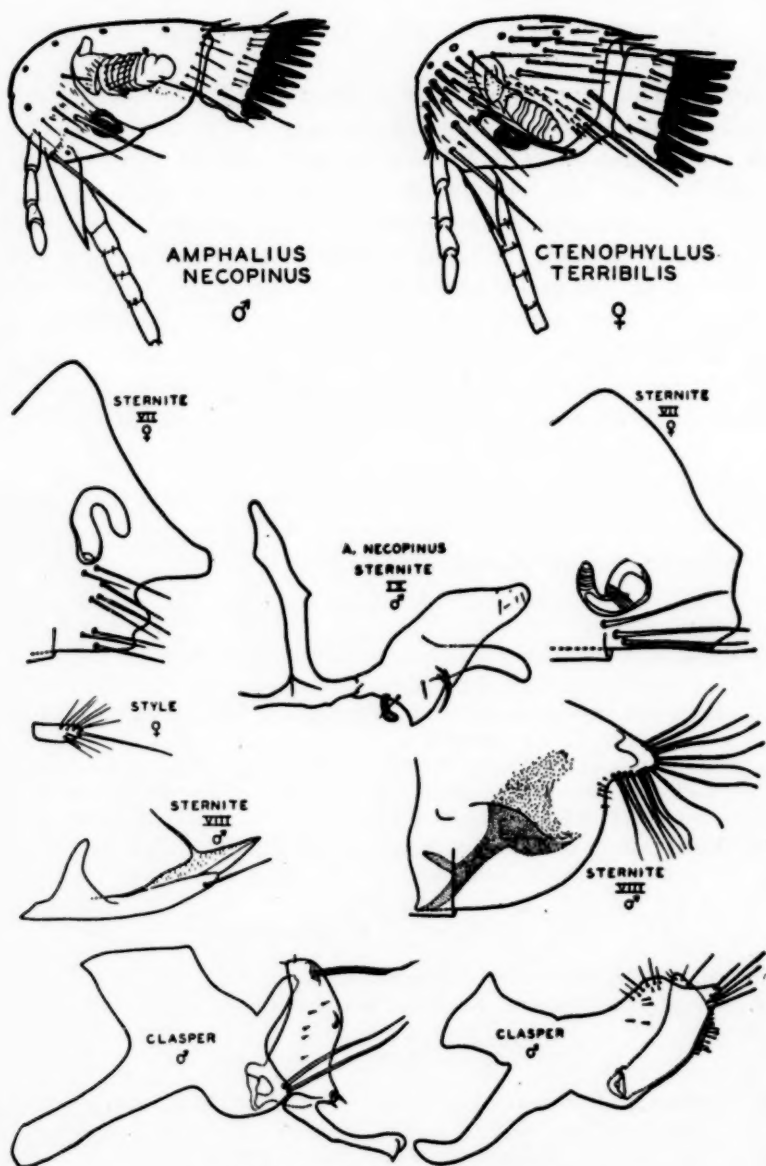


FIGURE 1.—*Amphalius necopinus* left; *Ctenophyllus terribilis* right.

1936. *Ctenophyllus terribilis* (Rothschild). Wagner: Canadian Entomologist, 68: 195.
1940. *Ctenophyllus terribilis* (Rothschild). Holland: Proceedings of the Entomological Society of British Columbia, 36: Feb. 24, 1940.
1940. *Ctenophyllus terribilis* (Rothschild). Hubbard: Pacific University Bulletin, 37: Number 4.

Originally described from 4 males and 5 females collected from "*Lagomys princeps*" = *Ochotona princeps* in Canadian National Park and 1 female from Banff. Both localities are in Alberta, Canada.

Head of female is figured. The head of the male has been figured by Rothschild (1903). The antennal groove is not continuous across the dorsum of the head. The frontal tubercle is prominent. A row of two normal and seven stout spinelike bristles extend along the front margin of the head. These are shorter and heavier in the female. Between this row and the ocular bristles are three long bristles. The ocular row contains three and sometimes four large bristles, the upper one is above the eye and near the margin of the antennal groove. There are other fine bristles on the gena and just anterior to the base of the antennae. The two oblique rows of bristles on the occiput contain about five bristles each. The fine bristles bordering the antennal groove are larger than in most fleas. The bristles on the second segment of the antennae are very small, not equaling the club. The club of the antennae is distinctly segmented. The labial palpi are five-segmented and equal about three-quarters the anterior coxae. The gena is acute, the eye well pigmented. Perhaps the most characteristic, though not very conspicuous, feature of the head is the internal rodlike structures on each side which extend from between the second and third bristles of the ocular row on the gena, posteriorly, concealed by the eye, to the hind margin of the head near the end of the antennal groove. According to Jordan (1933) the only other ceratophylline fleas known in America that have this character are of the genus *Odontopsyllus*.

Thorax and appendages.—The pronotum bears an anterior row of about 12 large and a few fine bristles and a ctenidium of 22 spines. The bristles on the inside of the hind coxae are long and slender, not approaching spiniform as in *Odontopsyllus*. The fifth segment of all tarsi has 5 lateral bristles.

Modified segments.—Male (fig. 1): The eighth sternite is bulbously rounded ventrally and is reinforced internally by a pair of Y-shaped sclerifications. The dorsal angles (right and left) of the eighth sternite project posteriorly and each bears a marginal row of 12 to 15 long, wavy bristles. The claspers are figured. The immovable process almost covers the movable process. Acetabular bristles are not discernible. The details of the ninth sternite are concealed by the other complex, bristled sclerites.

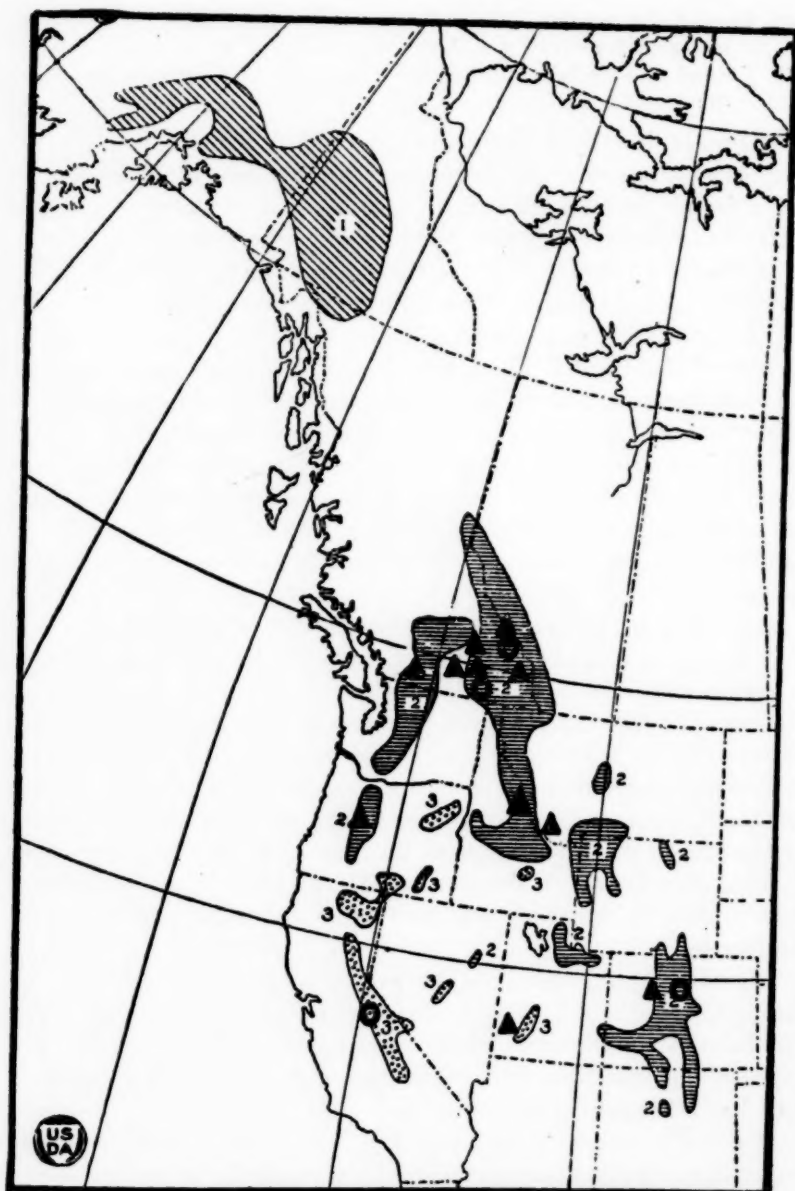


FIGURE 2.—Distribution of the American species of *Ochotona* (subgenus *Pika*) in the western United States, Canada, and Alaska. 1. *O. collaris*. 2. *O. princeps*. 3. *O. schisticeps*. From Howell (1924) and collection records of their fleas. ● = *Amphallus necopinus*, ▲ = *Ctenophyllus terribilis*.

Female (fig. 1): The posterior dorsal angle of the seventh sternite is not rounded, the posterior margin is nearly straight, and it bears a small ventral sinus and a ventral row of four bristles on each side. The head of the receptaculum seminis is nearly spherical, the tail is of even width, curves dorsally, and lacks an apical appendage. In shape and size it resembles that found in several species of the genus *Odontopsyllus*. The style is three times longer than broad and bears a terminal and two lateral bristles.

Asiatic representatives of this genus are *C. armatus* (Wagner) 1900, *C. subarmatus* (Wagner) 1900, and *C. hirticrus* (Jordan and Rothschild) 1923. Wagner (1936) states that *C. terribilis* is the nearest relation of *C. subarmatus*.

Previous records:

Rothschild (1903). Host, "*Lagomys princeps*" = *Ochotona princeps*, Canadian National Park, Alberta, July 26, 1899, 4 males, 5 females, and Banff, Alberta, July 26, 1899, 1 female (the type series).

Holland, (1940). Host, *Ochotona princeps*, Reno Mountain, Salmon, May 29, 1936, Mt. Dunn, North Thompson Valley, August 11, 1937, and 5 miles west of Salmon Arm, August 10, 1938, all localities in British Columbia.

Hubbard (1940). From "Conies" = *Ochotona* spp., Cascade Mountains, Oreg., and Goose Lake, Wash.

New records:² (See distribution map.)

From the collection of G. P. Holland, Livestock Insect Laboratory, Kamloops, British Columbia.

1. Host, *Ochotona princeps*, Robbins Range, British Columbia, October 3, 1939. 1 female, collected by J. D. Gregson.
2. Host, *Ochotona princeps*, Banff, Alberta, August 14, 1939, 2 females (topotypes) collected by J. D. Gregson.
3. Host, *Ochotona princeps*, Tappen, British Columbia, March 31, 1940, 1 male, 1 female, collected by G. P. Holland.
4. Host, *Ochotona princeps*, Robbins Ridge, British Columbia, October 3, 1937, 1 male, 1 female, collected by J. D. Gregson.

² Since the preparation of this manuscript and distribution map, the following specimens of fleas from pikas have been examined:

Ctenophyllus terribilis (Rothschild)

Host, *Ochotona* sp., Mt. Timanogus, Utah, July 2, 1937, 11 females, collected by J. S. Stanford and received from Robert Traub.

Host, *Ochotona princeps*, Park County, Montana, June 29, 1938, 3 males, 2 females, received from Dr. N. E. Good.

Host, *Ochotona princeps saxatilis*, San Juan County, Colorado, June 26, 1939, 1 male, 2 females, received from Dr. N. E. Good.

Amphilius necopinus (Jordan)

Host, *Ochotona princeps*, Park County, Montana, June 29, 1938, 1 male, received from Dr. N. E. Good.

Host, *Ochotona collaris*, Red Mountain, Mt. Hayes Section, Alaska, June 13, 1941, 2 males, from Jack Warwick.

Geusibia ashcrafti (Augustson)

A new species of pika flea from *Ochotona schisticeps albus*, Fresno County, California, has been described as *Geusibia ashcrafti* by G. F. Augustson (Bull. Southern Calif. Acad. Sci., 39: 203-204 (1940)). It is also recorded as *Augustsonius ashcrafti* (Augustson) by C. A. Hubbard (Pacific Univ. Bull., 37(8): 3-4 (1941)). So far this species is known only by females but if Mr. Augustson's generic assignment is correct, it adds a third genus of pika fleas to those represented in both Asia and North America. *Geusibia torosa* Jordan, 1932, the genotype, was described from *Ochotona cana* in Szechuan, China.

5. Host, *Ochotona princeps brooksi*, Dunn Peak, British Columbia, August 11, 1937, 1 male, collected by G. P. Holland.
6. Host, *Ochotona princeps*, Reno Mine, British Columbia, May 29, 1936, 1 male, collected by G. P. Holland.

From the United States National Museum, Washington, D. C.:

7. Host, *Ochotona princeps cuppes*, Okanagan, British Columbia, 1916. Collected by J. A. Munro, 1 female. (Data received from Dr. H. E. Ewing.)

From Prof. C. A. Hubbard, Pacific University, Forest Grove, Oreg.:

8. Host, *Ochotona princeps*, Fish Lake, Santium National Forest, Oreg., July 20, 1938. 1 female, collected by C. A. Hubbard.

From the collection of Dr. M. A. Stewart, University of California, Davis, Calif.: three specimens of *Ctenophyllus terribilis* which were duplicates from collections credited to G. P. Holland above, and add no additional records.

In the collection of the Rocky Mountain Laboratory, Hamilton, Mont.:

9. Host, *Ochotona princeps*, Beaverhead County, Mont., August 4, 1937, 1 female, collected by Wm. L. Jellison.
10. Host, *Ochotona* sp., Beaver County, Utah, July 1936, 1 female.
11. Host, *Ochotona princeps*, Silverlake, 32 miles west of Boulder, Colo., June 15 and 16, 1939, from 4 separate hosts as follows: 3 males, 7 females; 3 males, 10 females; 2 females; 2 females. Collected by Dr. Gordon E. Davis.
12. Host, *Ochotona* sp., Ravalli County, Mont., May 27, 1923, 1 male.

DISCUSSION

The mammalian family Ochotonidae appears to include but the single genus *Ochotona* although several subgenera are recognized. In a revision of the American forms, Howell (1924) has recognized three species and numerous subspecies, all of which he has referred to the subgenus *Pika* of Lacépède. In this subgenus he would also include several widely distributed Palearctic species. The presence of these two very distinct genera of fleas, *Amphalius* and *Ctenophyllus*, as almost exclusive parasites of pikas in Asia and North America not only indicates that they are true *Pika* fleas but that their relationship with this host antedates the separation of the pikas in the two faunal areas. Such a relationship has previously been suggested by Wagner (1932) for fleas of the genus *Oropsylla* which are characteristic parasites of *Citellus* and *Marmota*. As the Ochotonidae constitute a family of the Lagomorpha distinct from the true rabbits or Leporidae some relationships should be expected between the fleas of pikas and those of rabbits. So far no specimens of the genera *Cediopsylla*, *Hoplopsyllus*, or *Odontopsyllus* that are characteristic parasites of North American rabbits have been recorded for pikas although their ranges and habitats coincide in many instances. Jordan (1933) expressed a relationship by assigning only the genera *Odontopsyllus* and *Ctenophyllus* of the North American fleas to the group 1 of the

Ceratophyllinae while all other genera are assigned to group 2 and are largely rodent fleas. A careful comparison of these two genera emphasizes this relationship. To the writer this would suggest the possibility that *Odontopsyllus* and *Ctenophyllus* evolved from an ancestral form parasitic on *Lagomorpha* before the families Ochotonidae and Leporidae became distinct.

REFERENCES

- Howell, A. H.: Revision of the American pikas (genus *Ochotona*). North American Fauna, Number 47 (1924).
 Wagner, J.: Die Bedeutung der Flöhe für die Frage nach der Genesis der Säugetierfauna. Zoogeographica, 1: 263-268 (1932).

DEATHS DURING WEEK ENDED NOVEMBER 22, 1941

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Nov. 22, 1941	Correspond- ing week, 1940
Data from 88 large cities of the United States:		
Total deaths.....	8,354	8,074
Average for 3 prior years.....	7,987	
Total deaths, first 47 weeks of year.....	392,402	393,062
Deaths per 1,000 population, first 47 weeks of year, annual rate.....	11.7	11.7
Deaths under 1 year of age.....	524	501
Average for 3 prior years.....	495	
Deaths under 1 year of age, first 47 weeks of year.....	24,876	25,592
Data from industrial insurance companies:		
Policies in force.....	64,655,900	64,819,724
Number of death claims.....	10,168	10,773
Death claims per 1,000 policies in force, annual rate.....	8.2	8.7
Death claims per 1,000 policies, first 47 weeks of year, annual rate.....	9.3	9.8

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED NOVEMBER 29, 1941

Summary

There was little change in the incidence of influenza for the country as a whole, with 2,478 cases reported as compared with 2,469 for the preceding week. The decrease in Texas, from 1,295 to 1,088 cases, was slightly more than compensated for by minor increases in other States, principally in the southern and western areas—South Carolina from 291 to 378, Virginia from 157 to 184, and Arizona from 105 to 143. The total number of cases reported for the current week is above the 5-year (1936-40) median (1,588), but below the figure for the corresponding week last year (3,014), when the mild epidemic of last season had begun on the West Coast.

A total of 112 cases of poliomyelitis was reported, as compared with 158 for the preceding week. New York, with 17 cases, and Tennessee, with 13, were the only States reporting more than 10 cases.

New York reported 88 cases of typhoid fever as compared with 6 for the preceding week, and Ohio reported 16 cases (9 last week). The total for the country as a whole is 215, as compared with a 5-year median expectancy of 188.

Of 78 cases of endemic typhus fever, Georgia reported 30, Louisiana and Texas 11 each, and Alabama 10.

Of the 9 common communicable diseases reported in the following table, the total numbers of cases to date (first 48 weeks) for influenza, measles, and poliomyelitis are above the 5-year median expectancy.

The crude death rate for the current week in 88 large cities of the United States is 11.8 per 1,000 population, as compared with 11.7 last week and 12.0 for the 3-year (1938-40) average.

Telegraphic morbidity reports from State health officers for the week ended November 29, 1941, and comparison with corresponding week of 1940 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median 1936-40	Week ended		Median 1936-40	Week ended		Median 1936-40	Week ended		Median 1936-40
	Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940	
NEW ENG.												
Maine.....	0	0	2		3	3	281	125	38	0	0	
New Hampshire.....	0	0	1				11	0	1	0	0	
Vermont.....	0	0	0				0	19	19	0	0	
Massachusetts.....	4	4	5				134	226	211	2	1	
Rhode Island.....	1	1	0				20	0	0	0	0	
Connecticut.....	1	0	2	3	2	2	86	1	33	2	1	
MID. ATL.												
New York.....	14	10	27	14	12	11	263	644	373	12	4	
New Jersey.....	4	11	18	15	4	13	22	258	31	2	0	
Pennsylvania.....	12	11	36				289	746	61	5	2	
E. NO. CEN.												
Ohio.....	21	11	41	13	25	25	25	65	45	1	1	
Indiana.....	16	21	25	30	4	13	21	19	13	1	1	
Illinois.....	30	42	42	14	5	10	31	510	28	2	3	
Michigan.....	12	13	21	1	12	3	63	523	156	2	0	
Wisconsin.....	0	0	3	17	35	35	125	291	82	1	0	
W. NO. CEN.												
Minnesota.....	3	1	4			1	53	75	61	1	0	
Iowa.....	5	6	6			1	24	20	20	1	0	
Missouri.....	10	4	17	2	1	21	11	12	9	0	0	
North Dakota.....	3	2	2	16	13	16	70	0	1	0	0	
South Dakota.....	6	3	1				6	1	3	0	0	
Nebraska.....	4	0	4				3	0	1	0	0	
Kansas.....	7	3	6	5	5	5	12	21	20	1	0	
SO. ATL.												
Delaware.....	0	0	0	2			2	5	3	0	0	
Maryland.....	8	6	11	5	3	4	97	2	8	2	0	
Dist. of Col.....	0	0	2	1	1	1	4	1	2	1	0	
Virginia.....	27	32	38	184	107	107	117	20	20	2	1	
West Virginia.....	7	3	20	13	7	8	180	3	3	0	1	
North Carolina.....	70	30	64	1	10	6	416	25	136	0	1	
South Carolina.....	11	9	20	378	290	293	12	26	17	1	0	
Georgia.....	19	9	22	40	24	21	35	7	7	0	1	
Florida.....	8	5	5		11	6	6	1	2	2	0	
E. SO. CEN.												
Kentucky.....	13	14	16	2	18	17	87	145	69	4	0	
Tennessee.....	16	11	20	43	26	44	30	11	11	1	1	
Alabama.....	39	23	31	97	25	104	41	31	18	0	2	
Mississippi.....	15	6	12							1	0	
W. SO. CEN.												
Arkansas.....	17	11	16	82	43	59	26	9	9	1	0	
Louisiana.....	8	19	17	16	3	4	2	0	1	1	0	
Oklahoma.....	21	19	21	120	116	87	30	0	7	1	1	
Texas.....	67	28	57	1,688	252	268	141	24	24	0	0	
MOUNTAIN												
Montana.....	0	2	1	8	19	4	25	4	9	0	0	
Idaho.....	4	0	2	4		1	10	0	49	0	0	
Wyoming.....	3	0	0	2	4		1	2	2	0	0	
Colorado.....	14	6	10	33	5	5	128	60	41	1	0	
New Mexico.....	4	0	3	2	3	2	0	21	21	1	0	
Arizona.....	1	6	6	143	350	79	22	29	1	0	0	
Utah.....	0	0	0	1	9	9	62	2	8	0	0	
Nevada.....	0	0					0	0		0	0	
PACIFIC												
Washington.....	2	2	3		4		11	11	34	0	0	
Oregon.....	3	3	3	23	81	24	58	19	11	1	0	
California.....	18	29	39	70	1,400	63	446	51	57	0	1	
Total.....	645	416	829	2,478	3,014	1,588	3,539	4,065	3,425	53	22	40
48 weeks.....	15,092	14,346	25,336	586,956	182,210	165,468	851,423	252,893	277,990	1,880	1,543	2,666

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended November 29, 1941, and comparison with corresponding week of 1940 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median 1936-40	Week ended		Median 1936-40	Week ended		Median 1936-40	Week ended		Median 1936-40
	Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940	
NEW ENG.												
Maine.....	0	0	0	13	2	18	0	0	0	0	0	0
New Hampshire.....	0	0	0	10	5	8	0	0	0	0	0	0
Vermont.....	0	0	0	2	9	9	0	0	0	0	1	0
Massachusetts.....	1	0	0	203	124	124	0	0	0	2	1	1
Rhode Island.....	0	0	0	6	2	12	0	0	0	0	0	1
Connecticut.....	2	0	0	19	31	37	0	0	0	0	0	0
MID. ATL.												
New York ¹	17	2	3	205	230	292	0	0	0	88	15	9
New Jersey.....	6	1	0	101	103	97	0	0	0	1	0	4
Pennsylvania ¹	3	5	5	188	196	206	0	0	0	7	11	16
E. NO. CEN.												
Ohio.....	5	13	3	240	168	317	2	0	2	16	1	7
Indiana.....	3	9	1	100	93	153	0	0	4	4	2	1
Illinois.....	6	16	6	170	292	342	0	3	1	2	7	7
Michigan ²	1	5	3	231	153	281	0	7	4	1	1	4
Wisconsin.....	1	17	3	135	154	159	2	3	3	1	0	0
W. NO. CEN.												
Minnesota.....	1	5	3	54	68	131	0	10	10	0	0	0
Iowa.....	1	6	4	38	65	71	0	0	6	0	1	1
Missouri.....	1	4	2	87	54	94	5	1	7	7	3	6
North Dakota.....	0	0	0	14	11	41	1	0	4	0	0	0
South Dakota.....	0	0	0	15	32	32	0	1	1	0	0	0
Nebraska.....	0	3	0	27	11	33	0	0	1	0	0	0
Kansas.....	1	6	0	76	68	139	1	0	1	1	1	1
SO. ATL.												
Delaware.....	0	0	0	21	14	14	0	0	0	0	0	0
Maryland ²	4	0	0	60	51	52	0	0	0	5	4	5
Dist. of Col.....	1	1	0	18	19	16	0	0	0	1	0	0
Virginia ¹	5	4	1	50	66	54	0	0	0	11	4	7
West Virginia.....	1	10	1	72	39	64	0	1	0	0	4	4
North Carolina ¹	1	0	0	108	84	82	0	0	0	3	1	1
South Carolina.....	0	1	0	12	23	13	0	0	0	4	0	0
Georgia ¹	4	1	1	47	19	34	0	0	0	5	6	6
Florida ¹	0	2	0	4	7	7	0	0	0	1	1	1
E. SO. CEN.												
Kentucky.....	4	3	2	90	78	78	0	0	0	7	4	4
Tennessee ¹	13	2	1	85	58	61	0	0	0	6	4	4
Alabama ¹	8	0	2	42	30	27	0	0	0	3	5	2
Mississippi ²	2	2	2	22	10	13	0	0	0	3	3	3
W. SO. CEN.												
Arkansas ¹	1	0	1	18	20	20	2	5	1	5	4	4
Louisiana ¹	1	5	1	7	15	15	0	0	0	8	9	9
Oklahoma ⁴	2	0	0	22	38	38	1	0	2	7	4	5
Texas ¹	2	4	4	54	58	85	0	0	1	7	8	9
MOUNTAIN												
Montana ⁴	0	0	0	18	20	31	0	0	1	0	1	1
Idaho.....	1	0	1	10	19	19	0	0	1	0	0	1
Wyoming.....	0	0	0	5	9	8	0	0	0	0	0	0
Colorado.....	1	0	0	24	24	41	0	0	2	0	3	3
New Mexico.....	0	0	0	11	11	16	0	0	0	2	3	7
Arizona.....	1	0	0	3	2	5	0	1	0	1	0	1
Utah ²	0	0	0	20	14	24	0	0	0	0	3	0
Nevada.....	0	0	0	0	1	0	0	0	0	0	0	0
PACIFIC												
Washington.....	3	1	1	39	35	50	0	0	1	3	2	2
Oregon.....	0	0	1	6	17	41	5	7	7	0	2	2
California.....	8	2	9	111	140	180	0	1	1	3	2	11
Total.....	112	130	103	2,903	2,792	3,896	19	40	135	275	121	188
48 weeks.....	8,805	9,509	7,027	115,531	143,545	171,461	1,297	2,242	9,161	8,169	9,159	13,714

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended November 29, 1941, and comparison with corresponding week of 1940—Continued

Division and State	Whooping cough, week ended		Division and State	Whooping cough, week ended	
	Nov. 29, 1941	Nov. 30, 1940		Nov. 29, 1941	Nov. 30, 1940
NEW ENG.			SO. ATL.—continued		
Maine.....	19	24	Georgia ¹	29	22
New Hampshire.....	5	0	Florida ¹	9	1
Vermont.....	34	19	E. SO. CEN.		
Massachusetts.....	207	210	Kentucky.....	57	122
Rhode Island.....	59	8	Tennessee ¹	59	32
Connecticut.....	64	91	Alabama ¹	13	11
MID. ATL.			Mississippi ¹		
New York ¹	619	562	W. SO. CEN.		
New Jersey.....	214	187	Arkansas ¹	20	15
Pennsylvania ¹	183	503	Louisiana ¹	4	6
E. NO. CEN.			Oklahoma ¹	16	17
Ohio.....	159	271	Texas ¹	69	76
Indiana.....	34	19	MOUNTAIN		
Illinois.....	270	220	Montana ¹	9	5
Michigan ¹	415	308	Idaho.....	16	3
Wisconsin.....	287	117	Wyoming.....	12	1
W. NO. CEN.			Colorado.....	45	17
Minnesota.....	69	130	New Mexico.....	18	21
Iowa.....	10	37	Arizona.....	14	9
Missouri.....	36	51	Utah ¹	20	33
North Dakota.....	10	32	Nevada.....	0	0
South Dakota.....	2	0	PACIFIC		
Nebraska.....	2	29	Washington.....	106	94
Kansas.....	34	76	Oregon.....	51	15
SO. ATL.			California.....	182	462
Delaware.....	3	32	Total.....	3,822	4,310
Maryland ¹	46	107	48 weeks.....	194,995	155,280
Dist. of Col.....	32	10			
Virginia ¹	58	133			
West Virginia.....	18	12			
North Carolina ¹	156	136			
South Carolina.....	28	24			

¹ Typhus fever, week ended Nov. 29, 1941, 78 cases, as follows: New York, 1; Pennsylvania, 1; Virginia, 1; North Carolina, 4; Georgia, 30; Florida, 6; Tennessee, 2; Alabama, 10; Arkansas, 1; Louisiana, 11; Texas, 11.

² New York City only.

³ Period ended earlier than Saturday.

⁴ Rocky Mountain spotted fever, week ended Nov. 29, 1941, 2 cases, as follows: Oklahoma, 1; Montana, 1.

CONSOLIDATED MONTHLY STATE REPORTS FOR JULY, AUGUST, AND SEPTEMBER, 1941

Division and State	Actino- mycosis	Chick- enpox	Diph- theria	Dysen- tery, anaerobic	Dysen- tery, bacil- lary	Dysen- tery, unde- fined	En- ceph- alitis, epi- demic or le- thargic	Ger- man measles	Hook- worm disease	Influ- enza	Malaria	Measles	Menin- gitis, menin- gococ- cus	Mumps	Oph- thalmia neona- torum	Pneu- monia, all forms	Polio- myel- itis
NEW ENG.																	
Maine	220	3	3	1	1	1	62	1	1	1	1	444	2	404	1	30	22
New Hampshire	18	1	1	1	1	1	25	1	1	1	1	32	0	31	1	5	14
Vermont	104	1	1	1	1	1	80	1	1	1	1	256	0	179	1	1	6
Massachusetts	760	25	25	1	166	1	175	1	1	1	1	1,870	17	1,041	110	1,336	117
Rhode Island	56	20	20	1	2	1	5	1	1	1	1	70	1	28	1	26	25
Connecticut	328	10	10	2	23	1	45	1	1	1	1	832	4	478	1	228	77
MID. ATL.																	
New York	1,760	73	73	17	871	1	36	1,168	1	1	1	3,528	63	711	23	2,887	659
New Jersey	528	24	24	2	4	1	2	564	1	1	1	1,345	12	14	1	230	233
Pennsylvania	961	86	86	10	4	1	9	265	1	1	1	4,356	31	1,839	6	590	516
E. NO. CEN.																	
Ohio	645	66	66	2	44	1	9	53	1	1	1	1,824	10	308	1	531	330
Indiana	43	45	45	1	1	1	4	4	1	1	1	246	7	18	1	103	82
Illinois	649	152	152	20	47	1	114	30	24	24	24	930	11	854	12	1,058	214
Michigan	868	32	32	20	106	1	159	7	14	14	14	1,534	5	1	1	536	170
Wisconsin	988	4	4	1	1	1	39	2,794	1	1	1	2,794	7	1,695	1	165	37
W. NO. CEN.																	
Minnesota	282	32	32	11	7	1	522	2	2	18	3	74	3	273	1	103	176
Iowa	96	19	19	1	10	1	115	15	1	13	18	309	5	138	1	85	30
Missouri	83	75	75	1	1	1	3	407	1	20	28	407	2	1	1	152	22
North Dakota	81	13	13	1	62	1	1,060	133	80	80	1	133	1	18	1	81	7
South Dakota	31	74	74	1	1	1	194	27	1	1	1	64	1	1	1	31	14
Nebraska	34	9	9	1	1	1	52	69	3	3	1	69	0	26	1	2	12
Kansas	104	26	26	2	1	1	43	12	34	34	5	227	9	133	4	205	25
SO. ATL.																	
Delaware	10	1	1	1	1	1	1	35	1	1	1	1	1	24	1	7	10
Maryland	115	15	15	2	67	27	190	1,112	15	15	5	1,112	23	316	2	327	181
District of Columbia	27	10	10	2	3	1	1	180	3	3	1	180	2	42	1	85	47
Virginia	75	98	98	3	3,403	1	674	2,067	674	674	21	2,067	24	126	14	279	74
West Virginia	35	38	38	3	22	1	57	692	57	57	2	692	8	59	2	24	19

North Carolina.....	73	324	5	(c)	82	4	145	1,070	7	189	5	27	9	108
South Carolina.....	45	624	13	18	182	1,219	4,208	879	13	307	5	307	268	118
Georgia.....	23	22	27	1	1,208	152	471	578	3	90	3	57	108	633
Florida.....	26	36	7	1	1,213	122	51	109	4	114	3	3	176	149
E. SO. GEN.														
Kentucky.....	61	80	3	2	30	3	10	355	11	104	5	6	74	183
Tennessee.....	32	99	6	157	7	156	228	460	16	103	4	48	409	315
Alabama.....	22	180	4	6	6	167	2,358	278	15	75	4	43	212	709
Mississippi.....	453	123	539	4,028	2,053	2,555	17,357	1,430	4	1,217	30	1,070	735	99
W. SO. GEN.														
Arkansas.....	28	81	61	105	1	56	1,995	409	5	183	3	76	72	25
Louisiana.....	2	44	3	22	35	45	155	27	11	91	9	9	211	35
Oklahoma.....	21	65	5	175	6	148	857	238	11	106	4	15	114	15
Texas.....	279	301	146	1,028	34	4,228	3,633	966	11	823	30	486	1,196	49
MOUNTAIN														
Montana.....	108	42	1	13	39	24	1	53	0	26	-----	-----	19	10
Idaho.....	29	1	1	-----	4	2	-----	29	1	27	-----	-----	3	3
Wyoming.....	139	9	1	2	3	29	1	38	4	20	-----	-----	9	4
Colorado.....	119	98	8	8	146	251	2	267	9	147	-----	-----	78	18
New Mexico.....	36	5	1	67	3	8	23	205	3	45	-----	2	148	6
Arizona.....	52	10	1	79	22	23	14	464	2	140	4	18	174	4
Utah.....	40	1	1	1	103	335	26	79	0	102	1	40	40	23
Nevada.....	7	-----	1	-----	-----	26	-----	9	0	38	-----	-----	20	0
PACIFIC														
Washington.....	476	9	4	11	121	31	5	79	6	638	-----	1	52	40
Oregon.....	128	19	13	5	2	74	26	176	1	209	-----	-----	80	43
California.....	1,891	127	76	245	1,178	608	63	1,708	9	3,732	6	-----	1,511	99
Total.....	15	13,304	3,441	1,009	2,528	11,418	31,701	35,300	382	17,034	274	2,214	13,081	5,768
Third quarter 1940.....	5	13,441	2,819	1,024	1,251	8,892	40,939	24,405	324	10,194	151	2,530	13,414	5,794
Alaska.....	32	1	7	-----	188	595	-----	47	2	42	-----	-----	37	1
Hawaii.....	76	19	-----	59	72	30	-----	157	-----	46	-----	-----	120	6

1 Lobar pneumonia only.

2 Exclusive of New York City.

3 12 cases of unspecified type also reported.

4 1 case of unspecified type reported.

CONSOLIDATED MONTHLY STATE REPORTS FOR JULY, AUGUST, AND SEPTEMBER, 1941—Continued

Division and State	Puer-peral septi-cemia	Rabies in ani-mals	Rabies in man	Rocky Moun-tain spotted fever	Scarlet fever	Septic sore throat	Small-pox	Teta-nus	Tra-choma	Trichi-nosis	Tuber-culosis, respi-ratory	Tuber-culosis, all forms	Tula-remia	Typhoid and para-typhoid fever	Typhus fever	Undu-lant fever	Vin-cent's infec-tion	Whoop-ing cough
NEW ENG.																		
Maine.....				0	39	1	0	1			93	112		11		12	14	264
New Hampshire.....				0	22	2	0					65				3		52
Vermont.....				0	23	1	0				6							3
Massachusetts.....				0	674	13	0	3		10	753	836		13		15	11	75
Rhode Island.....		14		0	45	3	0				92	309		35		25		1,780
Connecticut.....		1		0	112	28	0		1	2	291	301		4		2		351
														15		32		499
MD. ATL.																		
New York.....		28		3	967	101	0	25		25	3,619	3,918		246	15	80	102	3,779
New Jersey.....		75		3	321	21	0	4		6		953		56		20		1,606
Pennsylvania.....				8	562		0	6				534	1	206		23		3,061
N. NO. CES.																		
Ohio.....	5		1	8	719	17	1	6	5		1,404	1,445	5	149	1	33		4,010
Indiana.....		2		5	147		4				476	450	3	44		6		231
Illinois.....		97		11	667		13	8	65	4	2,091	2,459	9	157	1	84	33	2,405
Michigan.....		20	1	0	665	111	11	3		1	1,359	1,359	1	92		36	54	3,617
Wisconsin.....				0	538	14	9					293		18		35		2,938
W. NO. CES.																		
Minnesota.....		4		0	218	26	2		2	1		593	9	11		36		809
Iowa.....		8		9	157	21	5	2			147	147		42		102		497
Missouri.....				9	293	10	11		103		652	652	19	124		16		486
North Dakota.....				0	21	2	0				86	93	4	5		10		253
South Dakota.....				0	60	4	6	1	6		47	47	1	8		5		152
Nebraska.....				0	74	5	1	1			21	21		3		144		144
Kansas.....		6		0	333	10	1	2			248	263	11	40		37	31	1,052
SO. ATL.																		
Delaware.....		3		1	44		0				58	58		4				28
Maryland.....		1		28	178	26	0	10			706	728		108	1	8	57	807
Dist. of Col.....				23	134	281	0	4			453	474		8		1		206
Virginia.....				6	196	12	1				646	646	2	144	4	2		725
West Virginia.....				17	270	33	0		2		575	627		107		2		329
North Carolina.....		52	1	0	63	8	3	14			627	627	2	122	10	6	5	2,069
South Carolina.....							0				142	142	1	127	34	6		1,188

WEEKLY REPORTS FROM CITIES

City reports for week ended Nov. 15, 1941

This table lists the reports from 135 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0		0	1	1	6	0	0	0	0	27
New Hampshire:											
Concord	0		0	0	1	0	0	0	0	1	15
Manchester	0		0	0	0	11	0	0	0	0	13
Nashua	0		0	2	0	1	0	0	0	5	6
Vermont:											
Barre	0			0		0	0		0	0	
Burlington	0		0	0	0	0	0	0	0	0	10
Rutland	0		0	0	0	0	0	0	0	0	8
Massachusetts:											
Boston	0		0	12	11	25	0	8	0	16	205
Fall River	1		0	0	0	8	0	0	0	0	25
Springfield	0		0	3	1	16	0	2	0	7	34
Worcester	0		0	1	6	10	0	0	0	7	52
Rhode Island:											
Pawtucket	0		0	0	0	5	0	0	0	0	16
Providence	1		0	6	1	3	0	1	0	12	53
Connecticut:											
Bridgeport	0		0	3	1	9	0	2	2	7	36
Hartford	0		0	3	2	2	0	0	0	0	45
New Haven	0		0	8	3	4	0	1	0	2	39
New York:											
Buffalo	0		2	2	7	6	0	6	0	10	133
New York	8	5	0	13	52	64	0	81	2	294	1,454
Rochester	0		0	0	0	4	0	1	0	6	63
Syracuse	0		0	0	3	3	0	0	0	19	51
New Jersey:											
Camden	0		0	0	0	0	0	0	1	6	42
Newark	0		0	2	7	10	0	3	0	50	92
Trenton	0		0	1	4	6	0	3	0	2	39
Pennsylvania:											
Philadelphia	2	1	1	4	11	52	0	20	0	33	453
Pittsburgh	4	2	1	0	7	13	0	5	3	9	142
Reading	0		0	0	0	0	0	1	0	7	28
Scranton	1			1	0	0	0		0	0	
Ohio:											
Cincinnati	1	1	0	0	6	13	0	6	0	13	147
Cleveland	0	13	0	1	11	20	0	3	1	26	185
Columbus	2		0	0	2	8	0	3	0	3	79
Toledo	1		0	0	2	3	0	3	0	14	69
Indiana:											
Anderson	0		0	0	1	1	0	0	0	1	10
Fort Wayne	0		0	0	3	1	0	2	0	0	29
Indianapolis	5		1	1	8	16	0	5	0	13	87
Muncie	0		0	0	2	2	0	0	0	3	12
South Bend	0		0	0	0	0	0	0	0	0	13
Terre Haute	0		0	0	1	0	0	0	0	0	16
Illinois:											
Alton	0		0	0	1	1	0	0	0	3	11
Chicago	17	4	0	14	25	53	0	29	0	118	704
Elgin	0		0	0	1	0	0	0	0	4	15
Moline	0		0	0	1	0	0	0	0	15	12
Springfield	0		0	0	0	6	0	0	0	0	15
Michigan:											
Detroit	5		1	7	11	76	0	15	0	54	274
Flint	0		0	0	4	4	0	0	0	1	39
Grand Rapids	0	0	0	3	0	0	0	0	0	3	29
Wisconsin:											
Kenosha	0		0	0	0	4	0	0	0	4	7
Madison	0		0	2	0	1	0	0	0	0	15
Milwaukee	0		0	3	1	18	0	6	0	77	80
Racine	0		0	2	1	5	0	0	0	12	22
Superior	0		0	1	0	0	0	0	0	4	4
Minnesota:											
Duluth	0		0	0	0	1	0	0	0	0	23
Minneapolis	1		1	2	6	6	0	0	0	22	111
St. Paul	0		0	1	2	6	0	2	0	21	63

City reports for week ended Nov. 15, 1941—Continued

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0			0		1	0		0	0	
Davenport	0			0		1	0		0	0	
Des Moines	2		0	0	0	3	0	0	0	0	42
Sioux City	0			0		0	0		0	1	
Waterloo	0			0		0	0		0	2	
Missouri:											
Kansas City	0		1	2	5	7	0	5	0	6	107
St. Joseph	0		0	3	3	5	0	0	0	0	23
St. Louis	3	3	0	1	12	21	1	8	0	5	203
North Dakota:											
Fargo	0		0	0	1	1	0	0	0	0	10
Grand Forks	0			0		0	0		0	0	
Minot	0		0	21	0	0	0	0	0	2	4
South Dakota:											
Aberdeen	0			0		2	0		0	1	
Sioux Falls	0		0	0	0	0	0	0	0	0	8
Nebraska:											
Lincoln	0			1		0	0		0	1	
Omaha	0		0	2	5	0	0	1	0	1	50
Kansas:											
Lawrence	0		0	0	0	0	0	0	0	0	9
Topeka	0		0	0	1	5	0	1	0	9	21
Wichita	0		0	2	2	7	0	0	0	5	37
Delaware:											
Wilmington	0		0	0	3	8	0	0	0	0	29
Maryland:											
Baltimore	2	6	2	27	11	24	0	5	0	22	208
Cumberland	0		0	1	0	1	0	0	0	0	13
Frederick	0		0	0	0	0	0	0	0	0	2
Dist. of Col.:											
Washington	1	1	1	1	5	17	0	10	0	21	154
Virginia:											
Lynchburg	1		0	0	3	2	0	0	0	0	13
Norfolk	2		0	0	0	2	0	0	0	0	17
Richmond	2		1	0	2	6	0	1	0	0	44
Roanoke	1		0	0	0	0	0	0	0	2	20
West Virginia:											
Charleston	0		0	0	0	0	0	0	0	0	20
Huntington	2			1		0	0		0	0	
Wheeling	0		0	10	2	0	0	0	0	2	22
North Carolina:											
Gastonia	0			0		0	0		0	0	
Raleigh	0		0	1	1	0	0	2	0	0	10
Wilmington	4		0	3	1	0	0	0	0	6	14
Winston-Salem	4		0	83	2	3	0	1	0	0	13
South Carolina:											
Charleston	1	25	0	0	3	0	0	0	1	2	20
Florence	0		0	0	0	0	0	0	0	1	5
Greenville	0		0	0	0	1	0	0	0	0	22
Georgia:											
Atlanta	1	5	0	0	4	9	0	11	0	0	91
Brunswick	0		0	0	0	0	0	0	0	0	3
Savannah	0	1	0	3	1	0	0	2	1	0	40
Florida:											
Miami	0		0	0	0	1	0	0	0	1	36
St. Petersburg	0		0	0	0	0	0	0	0	1	24
Tampa	1		0	0	1	0	0	0	0	0	19
Kentucky:											
Ashland	0		0	0	1	1	0	0	0	6	10
Lexington	0		0	0	0	0	0	1	0	1	15
Louisville	0		0	0	4	14	0	1	0	37	64
Tennessee:											
Knoxville	1	1	0	0	1	2	0	0	0	4	19
Memphis	1		1	1	3	6	0	4	0	7	75
Nashville	0		0	0	5	6	0	1	0	2	50
Alabama:											
Birmingham	2	7	1	0	2	7	0	6	1	1	70
Mobile	3		0	1	2	0	0	0	0	0	28
Montgomery	0	5		0		0	0		0	0	
Arkansas:											
Fort Smith	0			0		0	0		0	0	
Little Rock	1	7	0	0	2	0	0	3	0	0	35
Louisiana:											
Lake Charles	1		0	0	2	0	0	0	0	0	8
New Orleans	1	10	3	0	12	2	0	10	0	2	163
Shreveport	0	2	0	0	6	0	0	2	1	1	32

City reports for week ended Nov. 15, 1941—Continued

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Oklahoma:											
Oklahoma City.....	0	6	0	0	4	1	0	1	0	0	34
Tulsa.....	4		0	30	0	2	0	0	0	0	19
Texas:											
Dallas.....	6		0	2	1	3	0	1	0	3	74
Fort Worth.....	1		0	1	1	5	0	1	0	2	28
Galveston.....	0		0	0	0	1	0	1	0	0	7
Houston.....	2		0	2	9	2	0	4	0	1	74
San Antonio.....	0	21	1	0	6	4	0	11	0	4	69
Montana:											
Billings.....	0		0	0	1	2	0	0	0	0	6
Great Falls.....	0		0	3	0	0	0	0	0	4	4
Helena.....	0		0	1	0	0	0	0	0	6	1
Missoula.....	0		0	0	2	0	0	0	0	0	6
Colorado:											
Colorado.....											
Springs.....	0		0	1	0	5	0	2	0	0	14
Denver.....	7	11	2	9	4	4	0	0	0	32	76
Pueblo.....	0		0	20	1	1	0	0	0	0	9
New Mexico:											
Albuquerque.....	0		0	2	0	0	0	3	0	2	9
Arizona:											
Phoenix.....	2	32		0		0	0		0	0	
Utah:											
Salt Lake City.....	1		0	2	0	2	0	1	0	3	28
Washington:											
Seattle.....	0		0	0	2	1	0	4	0	42	93
Spokane.....	0	1	1	0	4	2	0	0	0	3	35
Tacoma.....	0		0	0	1	0	0	0	0	8	29
Oregon:											
Portland.....	1		0	3	4	3	0	0	0	2	64
Salem.....	0			0		0	0		0	0	
California:											
Los Angeles.....	5	15	3	32	3	17	0	16	2	28	346
Sacramento.....	2		0	0	2	1	0	2	0	0	35
San Francisco.....	0	6	0	2	5	4	0	5	0	4	165

State and city	Meningitis, meningococcus		Polio- mye- litis cases	State and city	Meningitis, meningococcus		Polio- mye- litis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Maryland:			
Boston.....	3	0	1	Baltimore.....	0	0	1
New York:				District of Columbia:			
New York.....	2	1	3	Washington.....	0	0	2
Rochester.....	0	0	1	Virginia:			
Pennsylvania:				Lynchburg.....	0	0	1
Philadelphia.....	2	0	1	West Virginia:			
Pittsburgh.....	0	0	2	Wheeling.....	0	1	0
Ohio:				North Carolina:			
Cincinnati.....	0	0	4	Wilmington.....	0	0	1
Cleveland.....	0	0	1	Tennessee:			
Indiana:				Memphis.....	0	0	1
Indianapolis.....	0	0	1	Nashville.....	0	0	6
Illinois:				Oklahoma:			
Chicago.....	0	0	4	Tulsa.....	0	0	2
Springfield.....	0	0	1	Montana:			
Michigan:				Great Falls.....	0	0	1
Detroit.....	0	0	1	Arizona:			
Minnesota:				Phoenix.....	0	0	1
Minneapolis.....	0	0	2	Utah:			
Missouri:				Salt Lake City.....	0	0	1
St. Louis.....	0	0	3	California:			
Delaware:				Los Angeles.....	1	0	1
Wilmington.....	0	0	1				

Dengue.—Cases: Charleston, S. C., 3; San Antonio, 2.

Encephalitis, epidemic or lethargic.—Cases: New York, 2. Deaths: Grand Rapids, 1.

Pellagra.—Cases: Louisville, 1.

Typhus fever.—Cases: New York, 1; Charleston, S. C., 1; Atlanta, 3; Savannah, 3; Miami, 1; Tampa, 1; Nashville, 1; Birmingham, 2; Montgomery, 1; Dallas, 1; Houston, 3. Deaths: Terre Haute, 1.

Rates (annual basis) per 100,000 population for a group of 89 selected cities
(population, 1940, 33,902,982)

Period	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let- fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases
		Cases	Deaths							
Week ended Nov. 15, 1941...	15.23	22.61	3.69	47.37	52.29	101.20	0.15	49.68	2.31	167.80
Average for week, 1936-40...	23.63	18.81	4.82	115.34	69.17	128.71	.78	49.12	4.97	170.68

PLAGUE INFECTION IN GROUND SQUIRRELS AND FLEAS FROM GROUND SQUIRRELS IN KERN AND SISKIYOU COUNTIES, CALIF.

Under date of November 17, 1941, Dr. Bertram P. Brown, Director of Public Health of California, reported plague infection proved, by animal inoculation and cultures, in organs from 10 ground squirrels, *C. fisheri*, submitted to the laboratory on October 30 from a ranch 2 to 4 miles east of Lebec, Kern County, Calif., and in a pool of 160 fleas from 3 ground squirrels, *C. douglasii*, submitted to the laboratory on September 18 from a location $\frac{1}{2}$ mile north and 1 mile west of Mount Shasta City, Siskiyou County, Calif.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended October 25, 1941.—During the week ended October 25, 1941, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunsw- wick	Que- bec	Ontario	Mani- toba	Sas- katch- ewan	*Al- berta	British Colum- bia	Total
Cerebrospinal meningitis	1	1	1	2	4	1			1	11
Chickenpox		9		160	145	34	62	11	47	468
Diphtheria		13	3	55	4	3	7			85
Dysentery				33						33
Influenza		16			6				27	49
Lethargic encephalitis						1	14			5
Measles				402	46	5	10	2	9	474
Mumps		1		251	45	34	32	10	15	388
Pneumonia		4			4		4		3	15
Poliomyelitis			11	1	1	2		1	1	17
Scarlet fever		10	16	137	132	20	10	20	8	353
Tuberculosis	3	14	3	59	44		1	1		125
Typhoid and para- typhoid fever		1		33	4		9	1	2	50
Whooping cough		18	3	115	115				49	300

* Encephalomyelitis.

GREAT BRITAIN

England and Wales—Infectious diseases—13 weeks ended March 29, 1941.—During the 13 weeks ended March 29, 1941, cases of certain infectious diseases were reported in England and Wales as follows:

Disease	Cases	Disease	Cases
Diphtheria.....	14,430	Puerperal pyrexia.....	1,861
Dysentery.....	1,747	Scarlet fever.....	16,144
Ophthalmia neonatorum.....	971	Typhoid and paratyphoid fever.....	227
Pneumonia.....	20,336		

England and Wales—Vital statistics—First quarter 1941.—The following vital statistics for the first quarter of 1941 for England and Wales are taken from the Quarterly Return of Births, Deaths, and Marriages, issued by the Registrar-General and are provisional:

	Number	Annual rate per 1,000 population		Number	Annual rate per 1,000 population
Live births.....	147,020	14.4	Deaths under 1 year of age...	10,985	1.75
Stillbirths.....	5,615	.55	Deaths from diarrhea (under 2 years).....	761	1.52
Deaths, all causes.....	178,647	17.5			

¹ Per 1,000 live births.

NOTE.—All deaths are of civilians only.

England and Wales—Vital statistics—Year 1940.—The following vital statistics for the year 1940 for England and Wales are taken from the Quarterly Return of Births, Deaths, and Marriages, issued by the Registrar-General and are provisional:

	Number	Annual rates per 1,000 population		Number	Annual rates per 1,000 population
Live births.....	607,029	14.6	Deaths from—Continued		
Stillbirths.....	22,731	.55	Influenza.....	11,420	
Deaths, all causes.....	572,644		Measles.....	855	
Deaths under 1 year of age...	33,892	1.56	Scarlet fever.....	152	
Deaths from:			Typhoid and paratyphoid fever.....	127	
Diarrhea and enteritis (under 2 years of age)...	2,893	1.48	Whooping cough.....	678	
Diphtheria.....	2,466				

¹ Per 1,000 live births.

NOTE.—All deaths are of civilians only.

MALTA

Communicable diseases—August 1941.—During the month of August 1941, certain communicable diseases were reported in Malta (including the Island of Gozo) as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis.....	1	.....	Scarlet fever.....	2	.....
Diarrhea and enteritis.....	.....	216	Tuberculosis.....	35	12
Diphtheria.....	16	2	Typhoid and paratyphoid	.....	.....
Influenza.....	8	.....	fever.....	52	3
Measles.....	4	.....	Undulant fever.....	85	1
Poliomyelitis.....	.....	1	Whooping cough.....	129	6

SWEDEN

Notifiable diseases—August 1941.—During the month of August 1941, cases of certain notifiable diseases were reported in Sweden as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	4	Poliomyelitis.....	75
Diphtheria.....	8	Scarlet fever.....	503
Dysentery.....	183	Syphilis.....	18
Epidemic encephalitis.....	2	Typhoid fever.....	21
Gonorrhea.....	1,079	Undulant fever.....	6
Paratyphoid fever.....	118	Weill's disease.....	3

SWITZERLAND

Notifiable diseases—August 1941.—During the month of August 1941, cases of certain notifiable diseases were reported in Switzerland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	13	Paratyphoid fever.....	5
Chickenpox.....	80	Poliomyelitis.....	213
Diphtheria.....	75	Scarlet fever.....	191
Dysentery.....	2	Trachoma.....	1
German measles.....	9	Tuberculosis.....	267
Influenza.....	4	Typhoid fever.....	4
Measles.....	168	Undulant fever.....	15
Mumps.....	37	Whooping cough.....	147

Zurich—Poliomyelitis.—For the period June 29 to September 6, 1941, a total of 63 cases of poliomyelitis was reported in Zurich, Swit-

zerland. For the period September 7 to October 18, 1941, a total of 201 cases was reported, by weeks, as follows:

Week ended—	No. of cases
September 13.....	35
September 20.....	47
September 27.....	40
October 4.....	28
October 11.....	27
October 18.....	24

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-named diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday of each month.

Plague

Brazil.—For the months of January to October 1941, inclusive, a total of 118 confirmed cases of plague was reported in Brazil, by States, as follows: January—Alagoas, 5 cases; Pernambuco, 20; Rio de Janeiro, 2. February—Alagoas, 9; Pernambuco, 16. March—Alagoas, 3; Pernambuco, 16. April—Alagoas, 5; Bahia, 1; Pernambuco, 5. May—Alagoas, 6; Bahia, 2; Pernambuco, 2. June—Alagoas, 5. July—Bahia, 2. August—No cases reported. September—Bahia, 3; Pernambuco, 5. October—Alagoas, 3; Bahia, 2; Pernambuco, 6.

Indochina (French)—Cambodia.—For the period November 1–10, 1941, 1 case of plague was reported in Cambodia, French Indochina.

Typhus Fever

Chile.—During the period March 30 to June 14, 1941, 110 cases of typhus fever with 10 deaths were reported in Chile.

Yellow Fever

Gold Coast—Northern Territories.—On October 17, 1941, 1 case of yellow fever with 1 death was reported in the Northern Territories of the Gold Coast.

Ivory Coast—Batende Region.—A report dated November 22, 1941, stated that 1 suspected case of yellow fever occurred in the Batende Region, Ivory Coast.

Sudan (French).—A report dated November 7, 1941, stated that 3 cases of yellow fever were reported in Bamako, French Sudan. Information dated November 22, 1941, stated that 1 suspected case of yellow fever with 1 death was reported in Bamako.